THIS WEEK'S National Petroleum NEWS

Coming Meetings

Fire and Safety Marshals, National Petroleum Association, Warren, Pa., May 28.

American Petroleum Institute, Division of Production, Baker Hotel, Dallas, Tex., June 3, 4.

American Society of Mechanical Engineers, National Oil & Gas Power meeting, Madison, Wis., June 15 to 18.

Society of Automotive Engineers, White Sulphur Springs, W. Va., June 15 to 19.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 18, 19.

American Society for Testing Materials, Chicago, June 22 to 26.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 16, 17, 18.

American Institute of Mining and Metallurgical Engineers, Petroleum Division, Houston, Tex., Oct. 2, 3.

American Petroleum Institute, annual meeting, Stevens Hotel, Chicago, Nov. 10 to 12.

Third International Conference on Bituminous Coal, at Carnegie Institute of Technology, Schenley Park, Pittsburgh, Pa., Nov. 16 to 21.

Geological Society of America, Mayo Hotel, Tulsa, Dec. 28 to 31.

National Petroleum News

Vol. 23 No. 21

Published by

The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.
Tel. CHerry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.
New York, 342 Madison Ave., Tel. Vanderbilt 3-3950 and 3-3951.
Houston, 2420 Gulf Bldg., Tel. Fairfax 6286.
Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

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Member Audit Bureau of Circulations and Associated Business Papers.

General

A. P. I. Report of Refinery Operations Week Ended May 23 33
Review of Late Production News 34
Consolidation, Economy, New Outlets to Solve Natural Gasoline Problems.... 35
Sidney S. Smith New President of Natural Gasoline Ass'n. 38
Oil and Railroad Executives Confer on Pipelines 39
Edward Bedford, Standard Oil Executive, Dies 41
Major Buyers Take 25% East Texas Crude at Posted Prices 45
East Texas Causes Apprehension as to Oklahoma Proration 48
Oklahoma-Kansas Drilling Down over Fifty Per Cent in Year 50
Handling "Outside Oil" Becomes a Problem for Kettleman Hills Association 53
Lower Royalties Necessary if Natural Gasoline Industry is to Survive—*by Dr. E. R. Lederer* 55
Liquefied Petroleum Gas Industry Shows Phenomenal Growth—*by G. G. Oberfell* 57
Growth of Foreign Refining Facilities to Cut in on American Exports—*by James Bwadbent* 73
U. S. Crude Production by Fields, Week Ended May 23 97
Gasoline "Tax Racketeering" Hit by Texas Legislature 103
Higher Viscosity Oils Not Needed for High Speed Driving 122

Merchandising

Sinclair Station Employes Have Own Orchestra 80
Jobbers Meet Co-Op Competition with Cash and Carry Plan 81
Specialized Lubrication Requires Variety of Oils and Greases 85

Markets

Chicago, Downward Price Trend Halted 101
Mid-Continent, Gasoline Prices 0.125 to 0.25 Cent Lower 103
Refinery Price Tables 104, 106, 107
California, Domestic Buying Active; Export Trading Quiet 110
Pennsylvania, Market Quiet 111
Eastern, Gasoline Buying On Larger Scale 112
Gulf, English Buyer Takes Cargo of Gasoline 112
Gulf Lubes Dull 112
Scale Waxes Quoted Lower 112
Complete Seaboard Prices 114
Tank Wagon Price Tables 116, 117
Aviation Gasoline Price Tables 117
Crude Oil Prices, All Fields 119, 121

Departments

The Editors' Viewpoint 29
The Mid-Continent Skyline 43, 44
Our Industry 54
New Refining Patents 66
New Patents 69
New Equipment 77, 82, 111, 122
New Books 90
New Stations Building 92
On the Lazy Bench 94
Oil Trademarks for Copyright..... 113
Oil Company Finance 122, 124, 126
N.P.N. Service Record 125

SIDNEY S. SMITH, manager of the natural gasoline department of the Shell Petroleum Corp., was elected president of the Natural Gasoline Association of America at its annual meeting at Tulsa, May 19 to 21.

Mr. Smith has been active in the technical work of the association, particularly in every phase of the co-operative program for the study of the manufacture and uses of natural gasoline and natural gas products.

Mr. Smith is a recognized authority on gasoline plant construction and operation, and has published a number of papers on the technical developments in the industry. He has carried out a large amount of experimental and research work in his own organization, and through it the unit plan of plant design has been developed.

He succeeds Dr. E. R. Lederer of the Texas and Pacific Coal and Oil Co., who has been the association's president for two years.

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland

Branch Offices
Tulsa, New York, Houston, Chicago

Vol. 23 **CLEVELAND, May 27, 1931** **No. 21**

Fueling Uncle Sam's Sky Fleets In War Maneuvers

By Roger B. Stafford
N. P. N. STAFF WRITER

"ALL in all, the field exercises . . . are of momentous import to the air defenses of this nation. It is a large scale test to determine the efficiency of equipment, to skill of personnel, the ability to control large units in the air, and to maintain them on the ground," wrote F. Trubee Davison, assistant secretary of war for air, of the 1931 maneuvers of the U. S. Army Air Corps, the greatest aerial mimic war ever attempted by this or any other nation.

DAYTON, O., May 22

The petroleum industry, acting in a civilian capacity, was called into service in determining two of the four objectives outlined by Secretary Davison-maintaining the air forces in the air and on the ground.

Our industry is performing its task with credit in fueling the 672 planes which are participating in this great test, and in providing them with lubricants.

Staff and flying officers were unstinted in their expressions of praise in what was done at the two army airdromes near Dayton—Fairfield Air Depot and Wilbur Wright Field—where mimic war operations centered for seven days.

Dayton gave the army air corps an idea of what may be

—Official Photograph, U. S. Army Air Corps.

The Standard Oil Co. of Ohio's fleet of improvised airplane tenders lined up at Wilbur Wright field. All trucks are late type semi-trailers with 750-gallon tanks

Fueling a pursuit plane during war maneuvers at Dayton. Note the chain bond between truck, plane and ground

expected of the oil industry in a war emergency. It was demonstrated how quickly and how efficiency a large fuel supply service for airplanes may be placed in line of duty.

Never before had our industry been called upon to supply so many airplanes with so much gasoline in so short a time for fueling. The maximum time permitted for fueling was specified in the contracts awarded various oil companies along the air routes that converged at Dayton.

At Dayton the maximum fueling time was 15½ hours spread over the seven days. Three hours was the maximum time allowed in any one day. In those seven days the planes took approximately one third million gallons of aviation gasoline, fighting grade. The delivery averaged 346 gallons of gasoline a minute and all deliveries were aboard the planes.

The public and press may have been awed by the spectacle in the 672 attack, pursuit, observation and transport ships in their maneuvers, but little was said in the newspapers of the great preparations that lay back of the show. But men of our industry will appreciate the work that was required before and during the maneuvers to provide this great air fleet with the fuel without which the war test would have been impossible.

The Standard Oil Co. of Ohio acquired the contract in April to fuel the ships. The contract called for the delivery of 322,600 gallons but the volume actually delivered to the ships exceeded this figure. Thirty-seven tank carloads of Stanavo Ethyl gasoline were delivered to Fairfield and Wright fields. This morning, after the last of the fleet was on the wing for the East, only a few tank truckloads were left from the 37-carloads.

The Dayton contract was the largest let for the maneuvers. The second largest contract was for 231,000 gallons at the Long Island airports, where the planes concentrated for the "attack" on New York. Richfield Oil Corp. of New York had the contract for the New York part of the maneuvers.

Other gasoline contract holders included Skelly Oil Co., at Tulsa; Sherwood Bros. at Baltimore; and, in their territories, the Colonial Beacon Oil Co., and Standard Oil companies of California, Indiana, Kentucky and New Jersey.

The fueling operation required speed with safety—and safety was provided at every step of the fueling operation.

There was no precedent for the Standard of Ohio to follow in arranging for service at Dayton. It had only a few weeks to plan and develop its entire set-up, from contracting for its gasoline supply to providing the safest, most expeditious method of delivery the gasoline f.o.b. airplane. What it did, it was indicated at the conclusion of the maneuvers at Dayton today, will be used as a pattern for fueling other large concentrations of airplanes at both military and civilian gatherings.

A preliminary survey of equipment requirements was made by the Ohio company before it entered its bid. When it got the contract it moved ahead quickly in working out concrete plans, which culminated in the mobilization of 50 of its latest type semi-trailer tank trucks at its Dayton bulk plant four days before the maneuvers were to begin.

E. J. Burkhardt, aviation department, Cincinnati division, of the Ohio company, was in general charge of operations from getting the fuel contract until the last ship took off for New York this morning. He had as lieutenants F. F. Sprengard, manager of the automotive department in the Cincinnati division, and C. S. Taylor, manager of construction department at Cincinnati.

A. W. Kenerson, general manager of the Standard of Ohio automotive department, acted as a clearing house in mobilizing the truck fleet. He soliciated the various Standard divisions in Ohio, ascertaining how many 750-gallon tanks could be sent to Dayton without crippling the regular operations of the company. Older equipment, held by the various division in reserve, was placed into regular marketing service and the newer standardized equipment was drawn on for the war maneuvers.

The company drew 16 trucks from its Cincinnati division; 14 from the Columbus division; eight from Cleveland; eight from Todelo, and four from Refiners Oil Co., a subsidiary.

These trucks were assembled at designated points in their respective divisions the morning of May 11 and proceeded to the Dayton bulk plant of the Standard, where they were prepared for field service.

At Dayton the rear bumpers were removed and wooden platform were attached to the rear

(*Continued on Page* 30)

The Editors' Viewpoint

Rate Increases on Petroleum Products Unlikely

THERE is little reason to believe that petroleum products will be included among commodities upon the transportation of which the railroads will shortly ask rate increases. The increases are to be sought unless the railroad presidents are deterred by public sentiment.

The railroad executives are proceeding upon the assumption, debated by many business leaders, that higher freight rates will put the roads in a position where they can resume buying of materials and supplies for needed improvements and even upkeep and that this large volume of buying will prove the impetus to start the general business structure moving in faster tempo.

The railroads took the initial step in their program a few days ago when Daniel Willard, president of the Baltimore & Ohio, told four members of the Interstate Commerce Commission in Washington about a meeting of railroad executives in New York the day before. President Willard has been the contact man between the roads and the commission since early in May, when the rail executives started what might almost be called formal meetings to consider relieving their plight.

The railroads have decided it is incumbent upon them to initiate rate changes that will result in an increase of $400,000,000 annually in their freight revenue, about 10 per cent. They decided they would not ask for horizontal percentage increases, but rather for increases here and there, in short, wherever they thought they might be able to get them and still hold the same of transportation business. No inkling has yet been made public as to the commodities, or class of rates, upon which they will ask increases.

AS FAR as higher rates for petroleum and its products is concerned, it will be recalled that the Interstate Commerce Commission, only a few weeks ago, announced the results of its investigation of the petroleum rate structure which was started some years ago. Its findings said the railroads could increase their rates on these products, but Commissioner Eastman said they should first consider if increases were advisable.

As a matter of fact, the roads have had the authority for a long time to make the rate on refined products from Group Three to Chicago 2.5 cents per hundred pounds higher than it has been since 1928; but they have been afraid to undertake anything of the kind for fear the loss of traffic resulting would more than offset the increased revenue through higher rates. When the roads talked about increasing the rate from the Mid-Continent a few years ago, the refiners said they would go ahead and build gasoline pipelines then.

It is more likely that the roads will try to increase rates on coal, sand, gravel and merchandise that cannot be moved so easily by truck as can petroleum products. The roads also think that the long haul rates on merchandise, which are now marked for reductions, should be held up. They think they can hold this sort of traffic no matter what may be done with trucks. They may also try to get an increase in grain rates, although the commission has ordered a cut in these rates. That subject is now in the courts in Chicago, with an injunction against the reduction order.

IT GOES almost without saying that the Interstate Commerce Commission will give the railroads such increases as can be found warranted. By law the commission is the guardian of the welfare of the railroads. It is almost its duty to allow increases when revenues are low, if the railroads can show they are likely to increase their revenues if higher rates are allowed.

While the commission is under legal obligation as a guardian of the railroads, it may take the view, in answer to the plea of the railroads, that reduced rates are what is needed, rather than increased rates. In 1922, the commission made a 10 per cent reduction in rates when business was bad. In a letter to Senator Couzens, of Michigan, chairman of the interstate commerce committee, early this year, the commission said its experience with this action taken in 1922 seemed to justify what it had done then.

An increase in railroad rates now would be contrary to all that has been going on for months. Every day the roads have been cutting some special rates in an effort to get more business. Oil rates in Texas have been but one sample. Conditions there are almost a rate war. Nearly every day one railroad or another asks and obtains permission to make a cut.

However, in three instances within a week, the federal regulating body has condemned formal efforts made by railroads to cut rates other than on oil. In any event such a procedure as the railroads seek to initiate through the commission in the line of a general rate cut would take several months to complete to the point that actual changes might be made in rates.

Refueling Sky Fleets

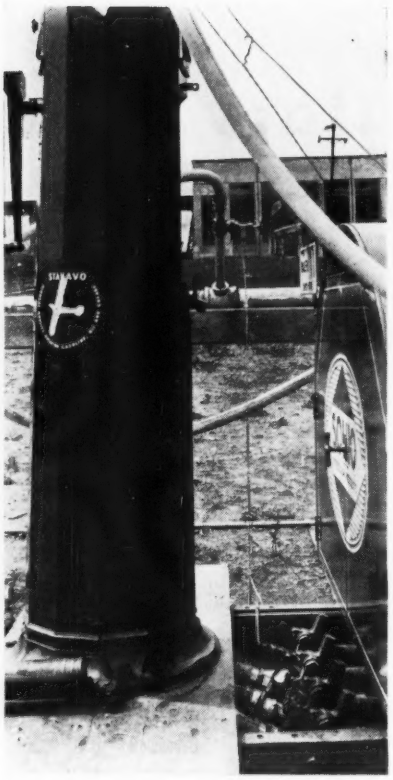
(*Continued from Page* 28)

ends. The platforms were of two 2 x 12-inch pine planks 5 feet long. These were bolted to 2½ x 5-inch oak studs, which fit into the steel channel extensions of the semi-trailer frames. The studs were bolted to the channels through the holes through which the bumpers had been bolted.

The Standard rented from the Dayton Pump & Mfg. Co., five-gallon hand operated self-measuring pumps with quick return pistons. The pumps were bolted to the platform with the crank facing the rear so the operator would not be hindered by hose or the two guy wires which were run around the necks of the pumps to the rear ends of the side racks of the trailers. The guy wires were used to stabilize the pumps as the tanks were driven over the fields. Each pump was equipped with 30 feet of 1-inch gasoline hose.

A manifold was rigged up of short lengths of flexible gasoline tubing and ordinary pipe fittings. (See illustration) Faucets were fastened in the open position so that gasoline could be drawn from all four compartments of the tank at the same time. Gallonage put out was counted by the pump.

Standard hose couplings were used on one end of the flexible tubing to attach the manifold to the faucets. An outside threaded coupling was screwed into the two ells and two tees which made up the cross member of the manifold together with a cross fitting and short lengths of pipe. The pump was attached to one part of the cross and below was a section of capped 1¼-inch pipe which served as a water and scale trap. Any moisture or dirt that could have gotten into the tank was caught in the trap and could be removed by unscrewing the cap. Another precaution against water and scale was the insertion of an 80-mesh cone screen in each nozzle.

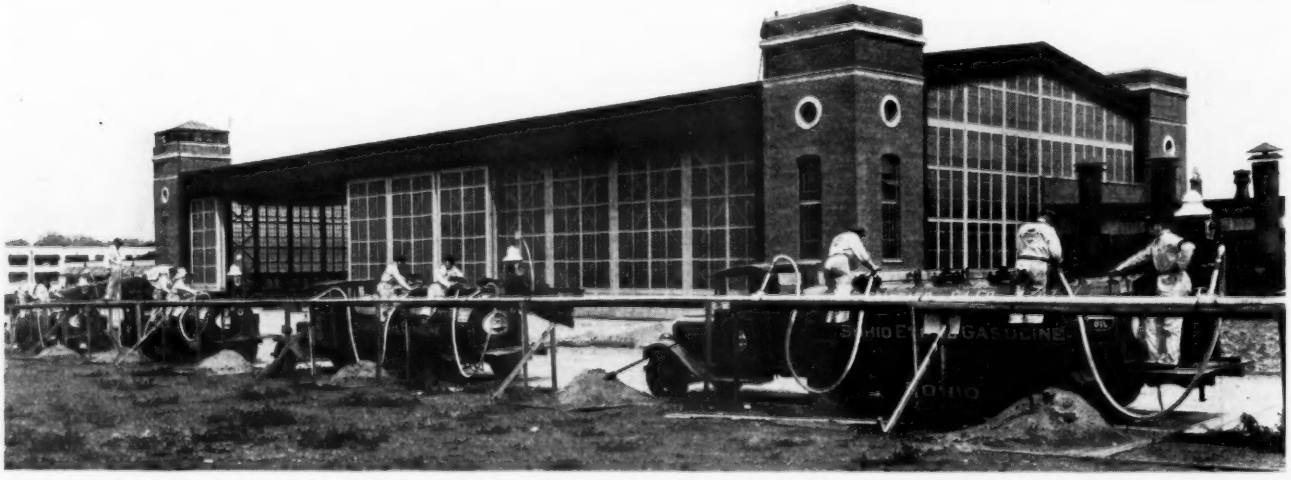


Looking down on the manifold where it was attached to the faucets

Tank car unloading racks and truck loading racks were set up at each field. It was possible to unload two cars at a time at each field. A combination of gravity and suction unloading was used.

On arrival at the field each car of gasoline was tested and then spotted at the unloading rack. Hose was attached to the bottom outlets of cars and the gasoline would flow to a special water trap tank set nearby. The tank of special heavy construction to withstand the vapor pressure of the fighting grade of gasoline.

Off the inlet line was an air release valve which would be opened when unloading of a car was started in order to permit the gasoline to flow into the tank without an air obstruction. The inlet line passed through the center of the convex top of the tank and down to below the center of the tank, and below the level of the bottom of the tank car. The outlet line was taken off the top edge of the side of the tank farthest from the railroad siding. Gasoline passed on to a Blackmer rotary pump of 200 gallon's capacity



The temporary loading rack at Wilbur Wright Field. Almost 200,000 gallons of fighting grade aviation gasoline passed through this line in a week. Had weather not delayed flying the time would have been only five days

per minute. The pump was electrically driven direct. By-passing was provided.

From the pump the gasoline would flow to the loading rack which consisted of a long pipe with eight outlets. Four trucks could be loaded at a time, each taking two hose.

The unloading line and line to loading rack was of 5-inch pipe. The loading rack line was graduated from 4-inch down to 2½-inch at the ends. The outlets each had 15 feet of 1¼-inch gasoline hose. The equipment at Fairfield and Wright field was identical.

The lines were attached to wooden frames but securely braced. The entire set-up was a temporary arrangement and not connected with the permanent fueling facilities of the two airports.

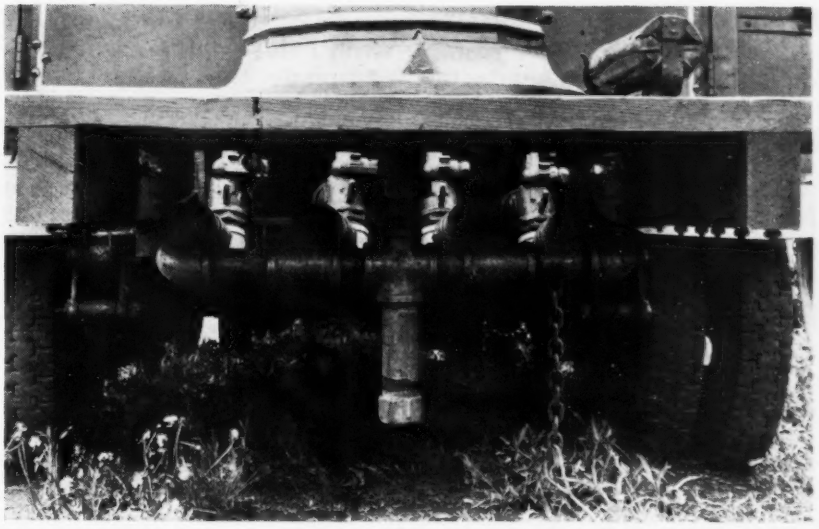
After the 50 trucks has been altered for field service at the Dayton bulk plant, a parade of them, two stake trucks, two construction trucks, two tanktrucks for fueling the airplane tenders, and cars of managers and supervisors paraded through downtown Dayton and then out to Wright field. There the intelligence division of the Army Air Corps took pictures of the fleet.

Twenty of the improvised tenders, with supply truck, one stake, one construction truck and an extra truck tractor were left there. On to Fairfield went thirty tenders with a complement of service units like those which had been left at Wright field.

On arrival at the field the tenders were filled with airplane fuel, and ready for the arrival of the first of the war planes.

Messrs. Burkhardt and Sprengard were in frequent communication with Lieut. Col. H. H. Arnold, in charge of supplies for the maneuvers, and Lieut. G. V. McPike, supply officer for both fields.

Days before the maneuvers were to begin the two fields had been marked off with broad white lines and the ships of the various air squadrons had been assigned definite spots where they were to park. These lines were at right angle to the "line," that imaginary divisional mark between the flying field and the hangars.



The manifold made of standard fittings with short lengths of 1½-inch gasoline hose and short lengths of pipe. The pipe extending downward is a trap for moisture and scale or dirt

Each squadron of 18 ships after landing would taxi to the point assigned to it. Nine ships would form in front of its perpendicular line with wings almost tip to tip. Facing them but with a lane amply wide for two trucks to drive abreast between the planes would be the other nine ships of the squadron.

The trucks of the Standard were stationed in several groups along the main line and as soon as a squadron would taxi into place and the propellers stopped revolving, the trucks were driven to the fueling task. An automotive man, assigned to a group supervisor, would signal how many trucks were needed for each squadron. This supervisor rode in a car up and down the field and around where the planes were parked.

Each truck had two men, the driver who was a picked man from his division, and a helper, who was a temporary employe that had been given a short training course just before the maneuvers began.

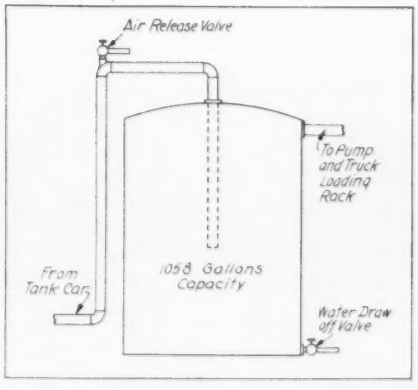


Diagram of pressure tank and water trap, one of the many precautions taken to insure moisture and dirt free fuel to Uncle Sam's war planes in the current maneuvers

A truck would pull up in front of a plane and the driver, after shutting off his engine, would bond the plane and truck with a chain which was grounded by means of a steel pin pushed into the ground. The driver would see that all safety measures were taken.

The driver was the commander of his tender. The helper had only to carry the end of the hose to the plane where it was manipulated by the air corps mechanic assigned to the ship and to operate the pump. No Standard man touched a ship except to attach a bonding chain. The helper turned out the gasoline, five gallons at a time, through the 1-inch hose.

The plane's tank filled the driver would make out in triplicate a government store's ticket for the volume delivered. This ticket would be signed by the officer of the squadron assigned to look after the fueling. One copy of the store's ticket (comparable to a sales ticket) was kept by the crew chief and the others turned over to the Standard's loading man when the truck was driven back to the loading rack, about a quarter of a mile away, for a refill. The driver had to account for the load in either tickets or returned gasoline.

At the conclusion of each day the tickets were tabulated to as-

certain the volume of gasoline delivered that day. Tax exemption slips were also made out at the end of each day to cover that day's deliveries. The exemption slips were on a special government form.

It was customary for two trucks to fuel each squadron of pursuit and observation planes but with the large bombers and transport planes it was sometimes necessary to send one truck to each plane.

A PURSUIT plane might take only 50 gallons at a refill, but one of the transport planes—a 32-passenger Fokker—took 775 gallons at one time.

Time studies were made of the operations of three trucks used in fueling three different types of ships.

One truck serving pursuit planes, left its parking space at 11:10 one morning and began fueling its first ship at 11:13. It finished its tenth plane at 12:55, an elasped time of one hour, 42 minutes. It delivered 769 gallons of fuel, an average of 7½ gallons a minute but it had gone to 10 different ships in that time, stopping and restarting the engine at each plane.

This truck returned to the loading rack, began reloading at 2 o'clock, and eight minutes later had aboard a new load of about 775 gallons.

A transport tender left its parking space at 9:45, started fueling at 9:50, finished its second ship at 11:04, an elapsed time of one hour, 14 minutes. It delivered 100 gallons to one ship and 671 gallons to the second. Its average delivery time was 14 gallons a minute.

A bomber tender served 695 gallons to six ships in one hour, two minutes. The average time was 11 gallons a minute.

The two trucks which served the airplane tenders at the two fields carried gasoline, oil and water from the Dayton bulk plant. The Daymount Tire Co. of Dayton checked the tires of the truck tractors and trailers each day. This company sent a road service car with compressor to each field.

Each truck carried tire chains which were used when the field became soft after a rain. However, because the ground was so soft May 17 that the trucks made ruts that endangered tail skids, the commanding officer changed the whole fueling schedule while several squadrons were in the air. He radioed squadron commanders to taxi to the flying line along which there was a rather hard road, to receive their fuel. This change caused a rapid switch in the Standard's tactics but every squadron was fueled in its allotted time as if no change had been made in set plans.

Safety arrangements were under the direction of James Herbert, Cleveland, safety engineer of the Standard. Mr. Herbert coached each man who was to participate in the fueling operations, in what to look out for and how to be prepared for emergencies. He had arranged for proper bonding at loading racks and on the field.

At each loading rack was a 40-gallon foam engine. On each wooden standard that held up the main loading line was a one-gallon carbon tetrachloride extinguisher. Sand had been placed in piles along the loading rack and at the pump. Whenever any gasoline was spilled in the loading process, in making a connection to a tank car, or in checking the water traps on the truck outlet manifolds, sand was thrown on it at once. Each truck on the field carried two one-quart carbon extinguishers. Along the line the air corps had placed 40-gallon engines and one-gallon hand extinguishers.

Precautions had been taken, but no fires happened. There was only one casualty in the Standard's personnel of about 130 persons on the field. One of the Standard's extra helpers cracked up a couple of fingers playing baseball in off hours.

THE men stayed at the field from 8 a. m. until the last plane was filled with fuel at night, usually 5:30 to 8:30, and the Standard's trucks were reloaded. The loaded trucks were parked in small groups some distance from the loading rack and a watchman was on guard over them at each field. The small groups were to minimize the hazard.

Fire extinguishers were tested each morning. Truck water drips were inspected each time the truck was reloaded. The screen in the hose nozzle was removed each day and cleaned.

Messrs. Buckhardt, Sprengard and Taylor worked at both fields to see that the work ran as contemplated. At Fairfield as supervisor was Carl Merrick of the Standard's sales department at Dayton. At Wright field as supervisor was George Schlereth, manager of the automotive department, Columbus division.

The personnel consisted of 50 picked drivers; 51 helpers, six automotive mechanics, six construction men, six experienced car unloaders and loading rack operators, and two load checkers.

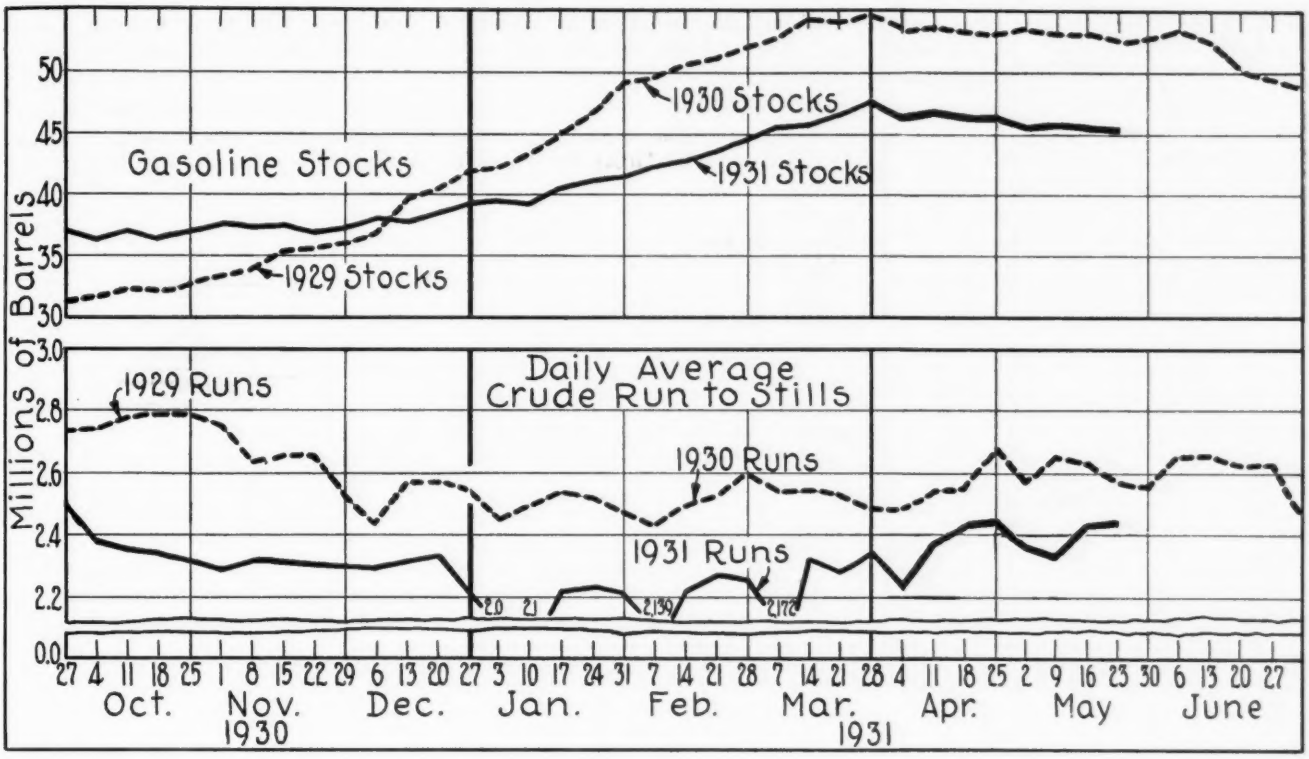
The Dayton Pump & Mfg. Co. had extra pumps and one pump mechanic at each field. If anything went wrong with a pump, it was removed and a spare pump put in its place. The mechanic would adjust the pump taken off and put it into the reserve.

TWO group meetings were held before the maneuvers. Drivers attended one group and the extra help the other. At each meeting, D. H. George, acting manager of the Cincinnati division, spoke of the responsibilities attached to the task ahead and urged every man to be on the job all the time. Mr. Herbert discussed safety point by point, from a set of instructions he had prepared especially for the mimic warfare. Mr. Burkhardt instructed the drivers in the writing of tickets on the government forms.

All men wore white-cover-all uniforms with red and white checked patch pockets, blue collars and blue belts. The trademark "Sohio" was on the back in red white and blue. Grey caps were worn. The caps were from the uniform of Standard of Ohio service station salesmen. Each man also wore a badge with his name written on it.

Engine oils were supplied at Dayton by Kendall Refining Co., Bradford, Pa. Oil was delivered to the fields in drums and service was in the hands of the air corps supply service. Oil was run from the drums into cans like those used for filling radiators with water. Oiling stations were spotted along the "line" and the oil was carried to the planes on hand trucks.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Small Reduction in Refinery Gasoline Stocks

By Telegraph

NEW YORK, May 26

GASOLINE stocks at refineries reporting weekly to the American Petroleum Institute were reduced 214,000 barrels in the week ended May 23. Total stocks on that date were 45,449,000 barrels. This is a reduction of only 164,000 barrels since May 2, far less than was recommended to the industry by the economics committee of the Federal Oil Conservation board or by the A. P. I. statistical committee.

California refiners were entirely responsible for the stock reduction in the week just closed. In that state gasoline stocks were cut 491,000 barrels to 12,902,000 barrels. On May 2 this group held 13,419,000 barrels of gasoline in stock.

Texas and Louisiana-Arkansas refining groups each added more than 100,000 barrels to gasoline inventories during the past week. Texas Gulf plants added 148,000 barrels and Louisiana Gulf plants added 142,000 barrels. Indiana-Illinois plants added 50,000 barrels of gasoline to storage.

Cracked gasoline output was increased 20,400 barrels daily average during the week to 476,700 barrels per day.

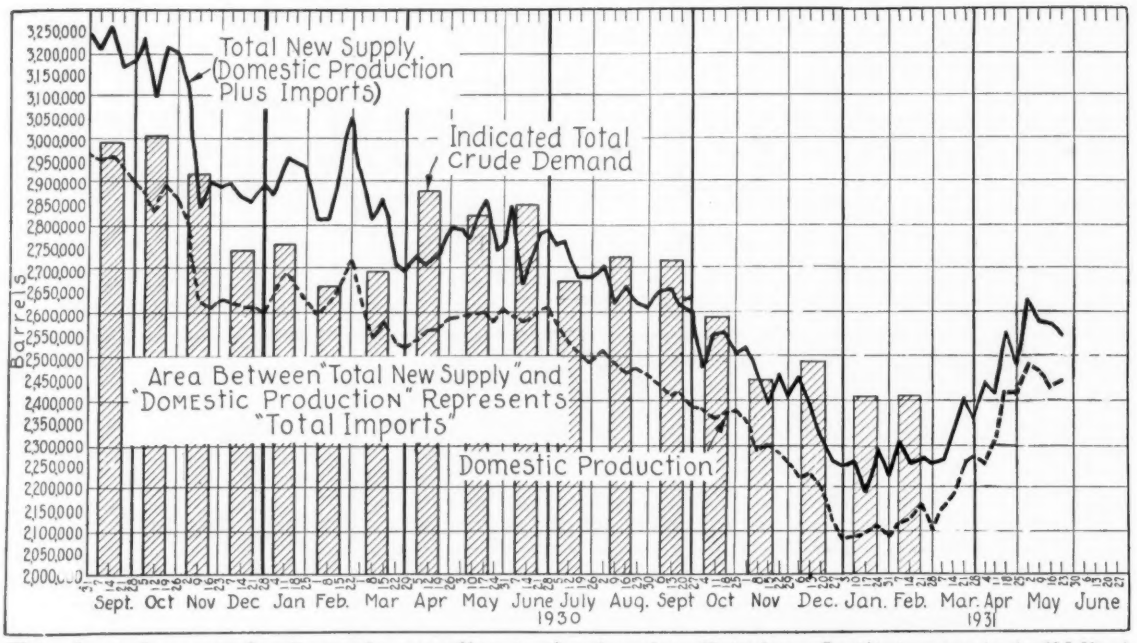
Crude runs to stills were largely unchanged. There was an increase of only 7600 barrels daily average for all districts. Plants were operating at 68.4 per cent of capacity.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gas & Fuel Oil		Cracked Gasoline Production % of Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended	
		May 23	May 16	May 23	May 16	May 23	May 16	May 23	May 16	May 23	May 23	May 16
East Coast	100.0	485,000	492,900	79.2	80.4	8,414	8,443	8,580	8,638	90.3	88,700	86,300
Appalachian	93.8	91,400	87,400	69.0	66.0	1,653	1,642	1,036	1,125	94.6	20,100	19,300
Ind., Ill., Ky.	97.5	336,700	332,300	88.4	87.2	6,432	6,382	3,671	3,653	95.2	91,300	85,500
Okla., Kans., Mo.	89.4	278,300	274,700	67.5	66.6	3,664	3,676	4,225	4,064	90.0	62,300	55,600
Texas	91.9	560,200	574,000	75.3	77.2	8,154	8,022	9,583	9,341	95.9	124,700	118,000
La., Ark.	98.3	160,100	170,600	61.1	65.1	2,336	2,208	2,389	2,410	97.7	31,100	33,600
Rocky Mountain	93.1	60,300	61,100	43.2	43.7	1,894	1,897	853	845	100.0	16,000	18,400
California	98.8	469,700	441,100	52.9	49.7	12,902	13,393	98,218	*98,408	100.0	42,200	39,600
Total	95.7	2,441,700	2,434,100	68.4	68.2	45,449	45,663	128,555	*128,484	94.9	476,700	456,300
Texas (Gulf Coast)	100.0	419,400	429,700	79.2	81.2	7,011	6,863	6,795	6,629	98.5	99,000	95,100
La. (Gulf Coast)	100.0	104,900	116,300	71.1	78.8	2,198	2,056	1,467	1,502	100.0	22,400	23,900

*Revised.

Review of Late Production News


Total New Supply (Domestic Production Plus Imports)
Indicated Total Crude Demand
Area Between "Total New Supply" and "Domestic Production" Represents "Total Imports"
Domestic Production
Barrels
Sept. Oct Nov Dec Jan Feb. Mar Apr May June July Aug. Sept Oct Nov Dec. Jan. Feb. Mar. Apr May June
1930
1931

This chart shows crude oil supply according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).

A DECREASE of 32,000 barrels in Oklahoma daily average production and a gain of 46,000 barrels in East Texas resulted in a gain of 10,000 barrels in daily average output in the country the week ended May 23, the American Petroleum Institute reports. Daily average output for the country was 2,437,150 barrels the past week.

Imports were nearly 105,000 barrels daily, compared with 147,000 barrels the week ended May 16. Total new crude supply was 2,541,300 barrels, a decrease of 32,650 barrels under the previous week.

California

AN OFFICIAL gauge of Superior Oil Co.'s Huffman No. 2, north dome of the Kettleman Hills, occasioned more excitement among California operators late in the past week. On an eight-hour flow test, the well produced 7030 barrels of 36.6 gravity oil per day or at a rate of nearly 22,000 barrels daily.

In the North Belridge district, production tests are expected soon on several wells reported drilling in the oil sand. Associated Oil Co. has drilled its Reward No. 1 on the flank of the structure to a depth of 5435 feet with reports of a continuous oil sand from 5090 feet to bottom.

Texas, New Mexico, Louisiana

EAST Texans affiliated with the recently active anti-prorationist group are agitating for increased production above the 160,000 barrels daily allowable contemplated by state orders until July 1. A meeting of the East Texas central advisory committee of eleven has been called for May 29, at Tyler, when the problem will come up again. Since proration was officially inaugurated May 1 production has exceeded the allowable by a minimum of 95,000 barrels daily and for the past week estimates place the excess at nearly 150,000 barrels, notwithstanding 90-odd per cent of the wells are prorated.

Crude and Gasoline Stocks

(In Barrels)

Crude stocks, March 31, 1931	499,210,000
Crude stocks a year ago	538,281,000
Gasoline stocks, March 31, 1931	47,773,000
Gasoline stocks a year ago	55,228,000

Current production in this country by pools is found on page 97.

Oklahoma, Kansas

WITH a total absence of field operations of significance, the attention in the Mid-Continent is centered upon the proration plans over the coming summer. Oklahoma City operators are seeking an increase in allowable production, and a reclassification of the field by producing sands, with differential takings between sands. Anti-prorationists have made the preliminary moves toward initiating a bill to repeal the proration laws, to be voted on at a general election.

Maintenance of proration in its present form, as well as price, is admittedly dependent upon the ability of Texas to get the East Texas situation into harmony with curtailment efforts in the rest of that state. At the rate it is going, fears are entertained as to the continuance of the program elsewhere.

Consolidation, Economy, New Outlets To Solve Natural Gasoline Problems

By Arch L. Foster

N. P. N. STAFF WRITER

TULSA, May 23

A COMPREHENSIVE plan for consolidation of natural gasoline manufacturing units is the best means now available to the natural gasoline industry to enable it to meet competition and to survive the present general crisis in a healthy condition, according to opinions expressed at the tenth annual convention of the Natural Gasoline Association of America which met here May 19 to 21.

The development and adoption of some such plan is imperative, in the opinion of several executives and technologists prominent in the industry. It will facilitate the elimination of duplication of personnel, of plant equipment and capacity, and of operation costs in general, and will materially reduce destructive competition between small and inefficient organizations as well as between larger organizations.

W. W. Robinson, Jr., The Texas Co. (Calif.) newly elected vice-president of the N.G.A.

While the time is not ripe to state just what the results of this suggestion may be, or whether a general concerted movement in this direction will be taken, the proposal has been made seriously and may result in a widely changed situation which will put a different face on the entire natural gasoline situation within a comparatively short time.

The increasing use of vapor recovery plants in refineries and the greater production of highly volatile hydrocarbons made available by cracking at higher temperatures and pressures, these factors are limiting the amount of natural gasoline needed by the refiner to blend motor fuel of the desired volatility. Consequently it is necessary now for the natural gasoline manufacturer to produce a maximum quantity of a different type of gasoline still better suited to the needs of the refiner than the customary product heretofore marketed has been.

Expansion of the number of uses to which natural gasoline can be put is all-essential to the future progress of the industry, in the opinion of speakers taking part in discussion during the convention meetings. Development and adoption of the new specifications, and the decreased volatility which is being demanded by refiners and produced by the manufacturers has, and will continue to make available, a larger proportion of the lighter constituents of natural gas for other uses.

In order to live and expand, the industry must find means for the adaptation of this material to either old or new uses, and to create new applications of natural gasoline hydrocarbons to domestic or industrial purposes.

The major development in the industry since the manufacture of gasoline itself is the liquefied gas industry, which in the last few years has expanded enormously. In a paper on the growth of this phase of the industry G. G. Oberfell, president of Philfuels Co., of Detroit, quoted figures which showed that the marketed production of liquefied gas in 1922 was 222,000 gallons. In 1928 four and one-half million gallons were sold, and in 1930 this amount had increased fourfold, or to 18,000,000 gallons. At the end of last year $17,000,000 was the investment in equipment serving 117,000 customers, all in the "bottled gas" division alone. The total investment for domestic, industrial and other applications of liquefied gas totalled $22,475,000.

Very enlightening cost figures were given by the author on the relative prices of butane

Emby Kaye, Skelly Oil Co., elected vice-president of the N.G.A.

gas and "city gas," which show that the former is appreciably cheaper to the consumer. For instance, when the delivered price of butane is eight cents per gallon, the equivalent cost of city gas of 530 B.t.u. heat value is 41.4 cents per thousand cubic feet.

This butane is in the butane-air type plant, of which the author estimated that 60 plants are now in operation, with at least 50 others already under construction or contracted for, throughout the country. Forty of these plants now operating are supplied by the author's company.

Another large application of liquefied gas which is increasing rapidly is the use of this fuel in industrial plants, and the supplementary use to aid artifiicial gas plants to supply adequate quantities of fuel during times of periodic peak consumption. In this way artificial gas plants may be designed for the normal consumption at a much lower cost than if built for the maximum output, the peak load being taken with the aid of liquid butane. Mr. Oberfell's paper is published on page 57 of this issue.

Disposal of residue gas, after the extraction of natural gasoline and liquefiied gases is a problem of major importance to both the gasoline man and the oil producer, according to D. C. Williams.

The two main outlets are, besides gas supplied for municipal and other fuel purposes, for repressuring oil fields, and carbon black plants. In view of the present trend toward conservation of gas in the field, the author stated that the gasoline manufacturer will be called upon to aid the producer to devise means for disposal of the surplus gas produced. In his opinion the better proposition will be for the gasoline operators to provide these means, by building carbon black plants or other means, and to operate these plants himself, rather than to have an outside organization to take care of the disposal.

D. M. Campbell of the United Gas Public Service Corp., newly elected vice-president of the N.G.A.

The sales managers' committee of the association has been collecting and tabulating data on gasoline sales under both new and old specifications during the year, and will be continued until 1932. Especially noticeable has been the rapidly increased trend of the market toward use of the new specifications during the last few weeks.

The effect of distress sales on the entire price structure has come in for a great deal of study recently. A distress sale can hardly be said to exist, according to the report of the committee, any sale made at a lower than regular price becoming immediately the going low market. Working with price publication committees the sales committee is making strong efforts to identify the nature of all sales so as to offset the effect, on the general market, of distress sales which are obviously not representative of the market at the time.

The widespread effect of the increase in the number of refinery vapor recovery plants on the potential and actual market for natural gasoline is noted by the committee, which observes that other outlets for their product must be found or developed. On this subject the report says:

"This committee and other sales committees before it, have long since recognized the growing effect upon our markets of recovery plants at refineries. The loss of outlets due to these investments has been gradual and other outlets have been developed to fill the gap, but a combination of the effects of these plants, the loss of a greater part of our Gulf Coast refinery business, due to curtailed export demand and a preponderance of light crude, the movement of California naturals westward from the Atlantic seaboard, pressing West Virginia and Pennsylvania naturals westward into Michigan, Ohio and even into Indiana.

Everyone knows J. F. "Jim" Nagle, sales manager for the natural gasoline division of Skelly Oil Co., Tulsa

R. E. Baker, of the Shell Petroleum Corp., Tulsa, one of the committee which drafted the new specifications recently approved by the association

W. A. Schleuter, president of the Refiners Supply Co., Tulsa

Dean Hyatt of the Texas Pacific Coal & Oil Co., is in charge of operations at Thurber, Tex.

A. T. Scherer (left), sales manager for the Sinclair Oil & Gas Co., and Howard Felt, Warren Petroleum Co., Tulsa

D. C. Williams, Continental Oil Co., and Stanley Sellors, Shell Petroleum Corp., St. Louis

has seriously affected the scope of our markets.

"With the present lack of demand for refinery gasoline compared to the production or the volume which the refiner desires to move, there is a natural tendency to decrease purchases as far as possible of any material which will have to be added to their own production or considered as a reduction in sales volume for the throughput of their own gasoline manufactured from crude. Hence, with the very low prices now prevailing for both refinery and natural gasolines, there was over the past year a considerable study and improvement in design construction and operation of recovery plants at the refineries, based upon the latest experience developed by the natural gasoline industry.

"This has resulted in a far greater effect on the consumption of natural gasoline at refineries than at any time in the past. Many of these recovery plants, especially where good cooling water is available, are recovering a product containing as high as 50 per cent butane. With this high butane product actually available at the refinery, the refiner is very loath to purchase butane in his natural gasoline, paying the natural gasoline price for it plus freight on the same when he already has as much or more than he can put into his motor fuel, available at his refinery.

"This material recovered at the refinery yields starting and antiknock characteristics and vapor pressure, but does not yield true volatility to his motor fuel, hence there is still a part of our natural gasoline which is highly desirable, if not essential, for the production of good refinery motor fuel. Therefore, in the last 30 to 60 days there has been a sudden interest and increase in demand for natural gasoline under vapor pressure specifications and having vapor pressure limits lower than those of the present regular grades. This is further evidence of the correctness of the new specifications promulgated.

"It is the general feeling that the industry is now headed toward the production of even more stable natural gasoline grades than in the past or at the present, with vapor pressure limits ranging from 10 to 18 pounds Reid for material for coastwise or export movement, to 20 to 22 pounds for domestic, all of which are highly desirable products according to many of the recent inquiries from the refiners.

Ray Miller, secretary of the N.G.A.

"This follows history, due to the fact that prior to the large production of the Seminole period, considerable "BB" and "C" natural gasolines were produced, but at that time the further study and education caused the demand to centralize to a very great extent upon Grade "AA." The new trend to more stable products will reduce the output of natural gasoline and increase the percentage used by the refiner for the production of ideal motor fuels.

"This leads to another thought which should be given consideration by the natural gasoline manufacturer, that as these more stable grades are manufactured, the cost of gas for the manufacture of natural gasoline at the gasoline plants, will become an increasing percentage of the gross returns of the manufacturer. This is due to the fact that the producers are paid upon the basis of the volume of gas on the test contents run in the field, which will remain constant, regardless of the product shipped, but the increased cost of gas will be occasioned by the higher prices which will be received for these products and which react for the benefit of the producer as most of the contracts are based upon the average selling price of the product shipped by the manufacturer. This is a fact which cannot be escaped at the present time.

"The above tendencies will therefore force the natural gasoline manufacturer to serious study and development of the markets for the lighter prod-

ucts, namely, propane and butane, and especially the latter, in order to offset this increasing cost of gas for treatment and the decreasing income due to the decreased volume of natural gasoline shipped."

One of the main efforts of the technical committee of the association has been to obtain data which will clarify the endpoint problem in connection with the distillation test and specifications. The A. S. T. M. Committee D-2 was persuaded to postpone a change in the endpoint last summer, till such time as the association can obtain more data on which to base a change.

For this purpose twelve gasoline blends were sent to each of six laboratories, a definite procedure was agreed upon, and a lengthy report has been made, which concluded that in a majority of instances distillations would have to be repeated if carried out by the A. S. T. M. suggested procedure. . The dry flask method gives higher endpoints, the endpoint deviates less from to normal, and nearly 31 per cent of the determinations fell within the tolerance of plus or minus 6 F. allowed for such determinations. Slight changes in the Reid vapor pressure method have been proposed which will be discussed at the June A. S. T. M. meeting.

Speaking as a refiner, Emby Kaye, in charge of manufacturing for the Skelly Oil Co., observes that the refiner can realize a profit for himself by the judicious purchase and use of natural gasolines of the desired volatility and vapor pressure for blending.

"In times like the present, when fuel is exceedingly cheap, and butane has a value of little more than ½ cent a gallon for refinery fuel, it would appear that the refiner would so balance his operation as to permit him to purchase such natural gasoline on the outside as would enable him to utilize greater volumes of his otherwise wasted butane," he said. "He can do this by buying partially debutanized natural gasoline, blending it with his own butane, and thereby receiving for that butane the same price as he receives for his regular refinery gasoline.

In most cases the saving in the freight on the 25 per cent to 35 per cent butane in regular "AA" gasoline would allow him to pay a reasonable premium to the natural gasoline manufacturer for the partially debutanized natural gasoline, and yet lay that material down at such a price which, blended with his own butane, would show him a profit. I believe that a good deal of money can be made by the refiner who will purchase his natural gasoline requirements selectively through the means provided by the new specifications recently announced by the Natural Gasoline Association and heretofore discussed."

Referring especially to the new liquefied gas industry, Kaye stated that if the money which is often spent to take away the customer of another concern were spent to develop a new customer, the industry would profit in every way without injury to any, and with advantage to consumer especially.

One suggestion for the handling of natural gasoline which received attention at the meeting was that made by F. E. Rice of the Phillips Petroleum Co. who suggested that economy of handling could be obtained by pumping raw natural gasoline into the line with crude oil and carrying it in this way to the refinery, where recovery could be accomplished in the regular refinery equipment, with reduction of the cost.

S. S. Smith, manager of the natural gasoline division of the Shell Petroleum Corp., newly elected president of the association, discussed at length the most satisfactory and economical methods for stabilizer operation and control.* He analyzed the different methods in use at present, presented their good and bad points very briefly, and discussed in detail the method of control by thermostatic control of the temperature gradient in the rectifying control with conventional pressure control. According to the author, this method produces a top product constant in composition but not in quantity, and always with the same fractionation efficiency.

*See International Petroleum Technology for May, 1931, page 197, for a comprehensive discussion of this whole subject of stabilizer control as written by Mr. Smith.

Sidney S. Smith New President Of Natural Gasoline Ass'n.

TULSA, May 22

SIDNEY S. Smith, in charge of the natural gasoline division of the Shell Petroleum Corp., with headquarters at Tulsa, was elected president of the Natural Gasoline Association of America at the annual convention here May 19 to 21.

Vice presidents elected were: Emby Kaye, Skelly Oil Co., Tulsa; G. M. Campbell, United Gas Public Service Corp., Houston, and W. W. Robison Jr., The Texas Co. (California), Los Angeles.

Four companies were elected new directors, and all expiring directors were re-elected. There were 13 hold-over directors. The men who will represent the directorate are:

M. E. Mockley, Amerada Petroleum Corp., Tulsa; J. A. Rafferty, (new) Carbide & Carbon Chemical Corp., New York; George Shaner, Carter Oil Co., Tulsa; W. E. Reardon, Columbian Gasoline Corp., Monroe, La.; D. C. Williams, Continental Oil Co., Ponca City; Walter Moran (new), Crosbie & Moran, Inc., Tulsa; W. A. Melton, Deep Rock Oil Corp., Tulsa; W. N. Corbett, Eagle Pitcher Mining & Smelting Co., Henryetta.

E. L. Peck, Empire Oil & Gas Co., Bartlesville; R. C. Wheeler, General Petroleum Corp., Los Angeles; D. E. Buchanan, Hanlon-Buchanan Co., Tulsa; F. C. Hall, Henderson Co., Tulsa; D. B. Dow (new), Indian Territory Illuminating Oil Co., Bartlesville; F. L. Chase, Lone Star Gasoline Co., Dallas; F. E. Rice, Phillips Petroleum Co., Bartlesville.

S. J. Fraser, Prairie Oil & Gas Co., Tulsa; C. F. Rosier

(new), Rosier & Pendleton, Fort Worth; W. Baker, Sinclair Oil & Gas Co., Tulsa; R. E. Beckley, Standard Gasoline Co., Los Angeles; E. R. Filley, Texas Corp., Tulsa; Dr. E. R. Lederer (retiring president), Texas Pacific Coal & Oil Co., Fort Worth; W. K. Warren, Warren Petroleum Co., Tulsa; O. H. Schoenwald, L. H. Wentz, oil division, Ponca City.

McColl-Frontenac Opens New Bulk Terminals

TORONTO, May 24.—The use of the new bulk terminals of the McColl-Frontenac Oil Co., at St. Johns, New Brunswick, and Kingston, Ontario, have affected a material savings in transportation costs for the company in handling petroleum products to the Canadian trade. The first cargoes have just been distributed through them.

The new Montreal East refinery of the company has recently established what is claimed to be a record for continuous operation of a new plant. From the initial firing of the plant more than two months ago it has since been in continuous operation, over a period of 64 days and five hours.

Gasoline Supply Men Elect Directors

TULSA, May 23.—Four new directors were elected by the Natural Gasoline Supply Men's Association at their convention here May 19 to 21. They are:

B. W. Vinson of the Vinson-Canter Co., Tulsa; E. H. Triphaus, Taylor Instrument Co., Tulsa; A. V. B. Candler, National Supply Co., Tulsa, and W. D. Moorer, Moorland Co., Tulsa.

These directors will assume their duties Jan. 1, 1932. The present offiicers will remain in office until that time. Late in December the board of directors will meet to elect their successors.

M. H. Kotzebue, vice president and general superintendent of the Tulsa Boiler & Machinery Co. is president of the supply men's association.

Oil and Railroad Executives Confer on Pipelines

(By Telegraph)

WASHINGTON, May 25

ACCEPTING the suggestion made by Elisha Lee, vice president of the Pennsylvania railroad, in his speech before the National Petroleum Association at its recent Cleveland meeting, executives of the oil industry and the railroads, May 22, held the first of a series of conferences which the railroad executives hope will result in a better understanding with respect to pipelines.

According to R. H. Aishton, president of the American Railroad Association, nothing in the way of definite conclusions was reached, other than that there should be no fighting between the two industries over the oil industry's pipelines.

One thing it is understood was brought out was a suggestion that, if the refiners were determined to build lines for carrying refined products, the railroad men would deem it their duty to ask Congress to require pipeline companies to obtain certificates of convenience and necessity from the Interstate Commerce Commission.

That body has the power to say whether a new railroad or an extension of an existing railroad is needed. An amendment to the law giving such power over pipelines would compel the regulating body to determine whether existing railroads and pipelines were adequate to carry the refined oil traffic. Thereby, that body, which is guardian of the railroads, would be able to protect them from the competition of new pipelines in areas where it thought there were enough pipelines and railroads already.

Among those representing the railroads were P. E. Crowley, president of the New York Central; Elisha Lee, vice president, Pennsylvania; Daniel Willard, president, Baltimore & Ohio; Hale Holden, chairman, Southern Pacific; J. J. Pelley, president, New York, New Haven & Hartford; E. N. Brown, chairman, the Frisco railroad; S. T. Bledsoe, chairman, Santa Fe; E. M. Durham, executive vice president, Missouri Pacific; R. H. Aishton, chairman, and Alfred P. Thom, general counsel, Association of Railway Executives.

Oil men present were Walter C. Teagle, president, Standard Oil of New Jersey; J. Howard Pew, president, Sun Oil; R. C. Holmes, president, The Texas Co.; Herbert L. Pratt, chairman, Standard Oil of New York; W. T. Wallace, vice president, Gulf Oil; E. G. Bullock, vice president, Standard Oil of Indiana; C. B. Ames, vice president, The Texas Co., and W. R. Boyd Jr., executive vice president, American Petroleum Institute.

M. H. Kotzebue

California Bills Not Signed

LOS ANGELES, May 22.—Contrary to reports of a week ago, the governor has not yet signed California's two new legislative acts, Senate Bills 362 and 363. Since these measures are not of an emergency nature the governor has 30 days to sign, failing which the acts would die through a pocket veto. Expectations are that both bills will be signed within the immediate future.

Ask Special Session of Texas Legislature

By Telegraph

HOUSTON, May 26.—Eastland and Fort Worth chambers of commerce have added their plea to that of the North Texas Oil & Gas Association that Governor Sterling call a special session of the Texas legislature to pass oil conservation legislation. The East Texas Chamber of Commerce directors have appointed a survey committee headed by J. K. Hughes, Mexia oil operator.

Charles F. Roeser, chairman of the East Texas operators central committee of eleven, issued a statement saying that 72 per cent of Sabine Uplift crude production now is selling below posted prices.

As of May 22 he said that 292,305 barrels moved out of the field. Approximately 28 per cent or 82,613 barrels moved at the posted price; 74,601 barrels at 25 cents per barrel; 4862 barrels at 28.5 cents; 6540 barrels at 30 cents; 57,831 barrels at 35 cents; 15,392 barrels at 37 cents and 38,766 barrels at 40 cents per barrel.

Safety Men Discuss Oil Tank Fires

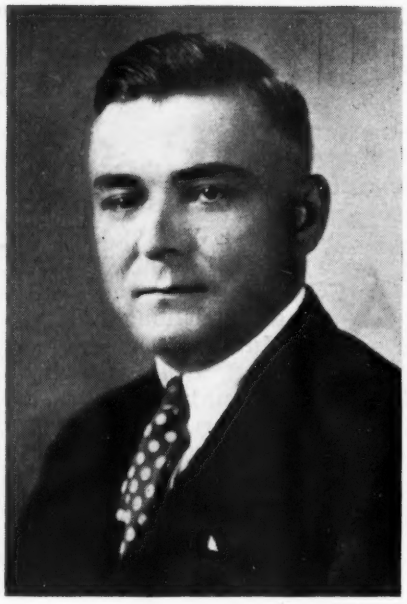
TULSA, May 23.—Tank fires, how to prevent them and how to handle, constituted the chief topics of discussion May 22 when the Kansas-Oklahoma chapter of the Petroleum Safety Council met in Tulsa. L. R. Hodell, of the Carter Oil Co., president of the chapter, directed the meeting.

Papers were read by William H. McGunagle, of Westcott & Greis, Inc. on prevention of tank fires and by J. M. Sherlock, storage superintendent of the Carter Oil Co. on fires on oil storage farms. Mr. Sherlock said that the cause of nearly all storage tank fires is lightning. There are several devices on the market with which to equip tanks, lightning arresters, and these have given worth while results.

"Our experience is that the simplest and most economical form of lightning protection for the tanks is simply the steel roof, properly vented by a vent which contains a fire-proof screen," said Mr. Sherlock.

Mr. McGunagle asserted that making tanks gas-tight and properly equipping them is profitable from the standpoint of saving vapors and that the same steps are also fire-preventive measures. He named a number of special equipment items now available for storage tanks, such as the self-closing gauge hatch, flame arresters, the gas-tight gauging device, etc., which are now in popular favor.

D. J. Wallace, director of safety for the Mid-Continent Oil & Gas Association, spoke briefly on the essentials of field safety meetings. He urged the safety directors present to make certain of a good room in which to hold meetings.



B. W. Miller

Proration Failure Causes East Texas Crude Cut

By Telegraph

HOUSTON, May 26.—Announcing a separate classification for Sabine Uplift region crude and cutting the price 30 cents per barrel, President W. S. Farish of the Humble Oil & Refining Co. today said:

"Product values have declined and the Railroad Commission's East Texas proration order has been obstructed and made ineffective, giving no alternative but to post a reduction in prices."

The statement cites that more than 150,000 barrels of crude are moving daily at 35 cents a barrel and less. Mr. Farish reiterated the principle enunciated by the Humble Oct. 16, 1930, in which he said that whenever any considerable quantity of oil is marketed from any field at less than posted price, the lower price establishes the market and downward readjustment must inevitably follow.

Under the new Humble posting oil below 35 gravity will bring 25 cents. For each higher degree of gravity up to 40 and above the Humble adds 2 cents per barrel to the price. The top grade thus brings 37 cents. The cuts amounted to 18 to 30 cents.

B. W. Miller Is President Miller-Riley Co.

COLUMBUS, Ohio.—B. W. Miller, formerly vice-president of the Miller-Riley Oil Co. here, was elected president at the annual meeting of the company. He will continue as general manager also.

The Miller-Riley company has eight service stations in Columbus, and is a distributor for Pennzoil motor oil in eleven counties in central Ohio. The company also has its own branded Peerless oil.

The main bulk plant, with 120,000 gallons capacity and an oil warehouse, is at 1120 W. Town st. There are two other bulk plants in Columbus also, one in the east end with 42,000 gallons capacity, and one in the center of the city with 15,000 gallons capacity. All oils are purchased in tank car.

The company was organized under its present name in September 1929. Previously it had been the Riley Oil Co. and Lloyd Riley continued as president with the new company. Mr. Miller has been associated eleven years with the former Central Ohio Oil Co., Columbus.

At the annual meeting Mr. Riley was elected vice-president. O. V. Sterrett was re-elected secretary and treasurer.

Credit Men to Meet in Boston

CLEVELAND, May 23. — Credit executives from the oil industry will hold special meetings at Boston during the meeting of the National Association of Credit Men June 22-27. C. E. Votrian of the Barnsdall Refineries, Inc., will be in charge of the oil industry conferences on June 26 and 27.

Kansas Operators Plan New Pipelines

TULSA, May 23.—Plans are in the making for a pipeline to tap the shut in pools of Ellsworth and Rice counties, western Kansas. The Standard Oil Co. of Kansas, Vickers Petroleum Co., El Dorado Refining Co. and Slick, Pryor & Lockhart are companies reported to be planning to join in the financing of the project.

The line as proposed would be eight-inch and would exceed 100 miles in length, from either Butler or Sedgwick county, to the Raymond pool of Rice county and adjacent pools on the Ellsworth anticline.

Another proposed line for Kansas, also a co-operative venture, is that of the Derby Oil & Refining Corp. and the Lario Petroleum Co. It would extend from Blackwell, Okla., to Wichita and thence to the Ritz-Canton area of McPherson county, utilizing the existing Derby lines in the Valley Center and Voshell areas. The Lario is controlled by the Globe Oil & Refining Co.

Completing Tankage for Phillips Terminal

KANSAS CITY, May 16.—When the Phillips Pipe Line Co. removed its Kansas City offices to Bartlesville, B. B. Shaw, construction engineer, was left in charge of the work being done at the Kansas City (Fairfax) terminal of the Borger, Texas, to St. Louis gasoline pipelines.

The line was placed under test May 7, and Mr. Shaw was rushing work on tankage necessary before gasoline can be put through the line from the Wichita terminal.

Edward T. Bedford, Standard Oil Executive, Dies

NEW YORK, May 25

ANOTHER chapter in this country's oil development closed May 21 with the death of Edward Thomas Bedford, long identified with the Standard Oil Co. in which he was associated with such figures as John D. Rockefeller, Charles Pratt and Henry H. Rogers. Mr. Bedford died at his summer home at Greens Farms, near Westport, Conn. at the age of 82.

At the time of death, Mr. Bedford was president of the Corn Products Refining Co., which he had developed from a consolidation of several small concerns in 1906 to a $90,000,000 concern.

He was also president of the Colonial Oil Co. of New Jersey, of the Bedford Petroleum Co. of France, of the New York Glucose Co. and the Self-Winding Clock Co. He was a vice president of the Matheson Lead Co., and an executive and director of several other companies, including transportation, bank and insurance companies.

Mr. Bedford rose to a position of prominence, power and wealth through his ability at selling. His first training along this line was in peddling vegetables from door to door from his father's farm. Later, when he went into business, he was a salesman with Charles Pratt & Co., oil dealer, and with Robert Chesebrough, now famous for vaseline, at which time he became known as America's greatest salesman.

He was one of those pioneers who saw the oil industry develop from a production of 5,000,000 barrels annually to the point where that figure represents but two days' output.

For many years he was with the Standard Oil Co., being a director and member of the executive committee from 1903 until the dissolution of 1911.

He was born in Brooklyn, N. Y., Feb. 19, 1849. Two sons, Charles E., vice president of the Vacuum Oil Co. and Frederick T., president, Penick & Lord, Ltd., both of New York, survive him. Also surviving him are his wife, Mary Ann Dingee Bedford; two daughters, Mrs. Preston Davie and Mrs. Harold Lloyd. A brother, Frederick H. Bedford, until recently a vice president of the Standard Oil Co. of New Jersey, lived at Greens Farms with Mr. Bedford.

Funeral services were at Greens Farms May 23 and interment will be at Willow Brook Cemetery, Westport.

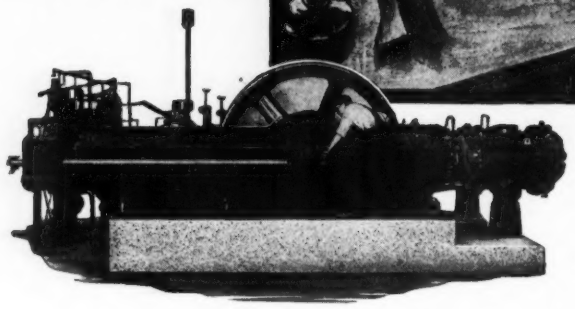
B. B. Shaw

Proration Committee for Kansas

TOPEKA, May 23.—An advisory committee of Kansas producers probably will be named by the Public Service Commission to assist in the administration of the new proration law in Kansas, Commissioner Thurman Hill announced at the conclusion of a conference between the commission and producers in the Ritz-Canton field. This pool is the only one in the state that is now under proration.

Some Day

YOU'LL LOOK BACK—



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An Open Letter

Mr. Cicero I. Murray,
Chairman, Oil States Advisory Committee,
Oklahoma City, Okla.

My Dear Chairman:

Ever since it became apparent that you were in dead earnest about your ambition to lead the oil men to a nobler state of existence, I have been giving some thought to the social courtesies that must be taken into account.

You see we have what is practically a new division of the oil industry to deal with. Where formerly we had only producers, refiners, marketers, pipeliners and receivers, we have a body of men bearing various kinds of titles, such as members of the Federal Oil Conservation Board, corporation commissioners, members of the advisory committee, umpires, technical advisers to proration committees, unit development experts, etc. Let us, for the sake of brevity, refer to them as the Intelligence Department.

Now, their duties are fairly well known and their paths marked for them, but in matters of social seniority and precedence we have no guidance. In fact, no thought has been given to it. When we realize how nearly a federal administration came to being wrecked over the question of who was to sit in the best chair (not the one with the weak leg—the other one) we may well pause to give a moment's consideration to the manner we shall rank the members of the Intelligence Division. Many a what the French call a fore paugh may be averted if we give heed to this question.

I believe it would be well to get out a manual on the subject. For instance, should you or Ray Collins go through a door first, both of you having arrived simultaneously? And which, if either, should come out first, if at all?

While you have a more imposing title, he is the senior umpire of the industry. Or, should Dr. Wilbur, in his capacity of Secretary of the Interior, precede himself as chairman of the conservation board, in getting on or off a street car? And, if so, where would that leave the chairman of the legal sub-committee of the Oil States Advisory Committee?

On entering a port town, army or naval ordinance being present, should the Oklahoma conservation agent or the vice-chairman of the A. I. M. E. for unit development receive the salute of the greater number of guns?

An ex-conservation agent in Arkansas stood in line two days to get a bowl of soup, only to find when he got there that it was a run on the bank. Had the customs and usages of the Intelligence Department been defined, preferably by law, he would have occupied a special status and would have gone to the head of the line at once, passing all ordinary citizens.

I urge you, Mr. Chairman, to give this matter immediate attention. Only today I saw Umpire Collins start in on his soup before Mr. Mapes, a member of the A. P. I. committee on economics, had taken his stance. Is that correct? I don't know, but it should be settled.

I hope that I have not violated the decencies of polite conduct in writing to you instead of to Mark L. Requa, voluntary chairman of the committee on petroleum intangibles.

Ellick Botts,
Consulting Pumper,
Gray Horse, Okla.

Testimonial to the quickness of setting up a certain grade of cement can be obtained from "Andy" Ritchie, general superintendent of the Derby Oil Co., Wichita. The company was drilling a well in a community of "Fur-bearing Dutch," or Mennonites, in Kansas, and employed the landowners to help unload some cement. The fine powder, in considerable quantity, settled through his luxuriant beard and in no time at all was thoroughly caked. He had to submit to a shearing operation, which is all against his religious creed. He is still smooth-shaven, probably indicating that the oil business made another inroad on the church.

* * *

At a meeting of the executive committee of the American Association of Petroleum Geologists held in Tulsa, decision was reached to hold the 1932 meeting of the association in Oklahoma City, March 17, 18 and 19. L. P. Garrett, president of the association; Frank C. Clark, second vice-president; F. H. Lahee, third vice-president and Sidney Powers, past president, attended the meeting in Tulsa.

* * *

Arthur W. Dustin, geologist, was elected president of the Mid-Continent Royalty Owners Association on May 4. He succeeded J. M. Hayner, Tulsa. Carl M. Blackman, Mid-Continent representative for J. Edward Jones, New York, was re-elected first vice-president. Other vice-presidents are J. R. Simpson, of the Homestake companies and Frank M. Greer. Both live in Tulsa. William R. Kavanaugh resigned as secretary, treasurer and manager and H. M. McMillan, president of the Galer Royalty Co. was chosen as his successor.

Tube Turns, Inc., Louisville, remembered all its friends who were unable to see the Kentucky Derby. Within a few hours after the race was run, a copy of the Courier-Journal, of Louisville, was in the mails to several hundred people, with the compliments of Tube Turns.

* * *

D. L. Winsett, formerly chief chemist at the Boynton refinery of Marathon Oil Co., is now superintendent of that company's plant at Del Rio, Tex. J. R. Barrott, who was superintendent at Boynton until he went to Del Rio, is back in his old place at Boynton.

* * *

The Tulsa board of education is not only becoming an aggregation of oil men but of oil technologists. In the election of May 19, two more were added. They were Wendall A. Melton, superintendent of the gas and gasoline departments, Deep Rock Oil Corp. and Robert H. Wood, geologist and oil producer. Luther H. White, chief geologist for the J. A. Hull Oil Co. has been a member of the board for the past two years and is now its president.

* * *

Harold Adkison, graduate petroleum engineer and mechanical engineer, from the University of Oklahoma, has been appointed Mid-Continent secretary of the American Society of Mechanical Engineers. He will maintain offices in Tulsa. A. J. Kerr, of the Pittsburgh Equitable Meter Co., is Mid-Continent chairman.

* * *

Well, we have been reading a lot about the pajamas-for-outdoors-wear, as who hasn't, but it required a trip to Braman, Okla., actually to see an authentic case. Life in the oil country, after all, has its points.

* * *

Carl H. Gomph has been made treasurer of the Illinois Pipe Line Co., subsidiary of the Ohio Oil Co. He succeeds F. J. Sargent, who died in December.

* * *

G. A. Waring, for several years chief geologist for the Margay Oil Corp., has accepted an assignment with the U. S. Geological Survey to study mineral resources in Alaska. May 30 was the date set for the party to leave Seattle.

* * *

Gen. Burke H. Sinclair, for many years with the Midwest Refining Co. and the Standard Oil Co. of Indiana, has left the latter company and engaged in the petroleum marketing business at the Sinclair Oil Co., with headquarters in Billings, Mont. The new company is in both the jobbing and the retail field.

* * *

Co-operative work between the U. S. Geological Survey and the Kansas Geological Survey will be carried on by eight field parties in Kansas this summer. Dr. R. C. Moore, state geologist, and K. K. Landes, assistant, will head two of the parties.

* * *

Aside to Paul Wagner: Reid McBeth, of the Oklahoma Natural Gas Co., informs us that a second-hand bookstore has been opened in Little Rock, the first in that state. Frank Billingslea, oil producer, Tulsa, has already paid it a visit, in the interest of his collection of rare volumes, but he may have left some for you.

* * *

Another aside, to H. C. Bretschneider, Midwest Refining Co.: As Cousin Cicero I. Murray plans to hold a reunion of his Oil States Advisory Committee in Denver, Aug. 10, please have your golf mallets ready to resume hostilities where we left off two years ago.

* * *

Chester Rogers, superintendent of the Lone Star Gasoline Co.'s plant at Hollis, Okla., was recently married to Miss Kathleen Coley, of Hollis.

* * *

D. B. Cogswell has disposed of his interest in the Fredell Construction Co. of Denver to become associated with the Moody-Seagraves interests, Houston. The Fredell company has had an active year in gas line construction and was recently awarded the contract to lay 100 miles of 12-inch line for the Sinclair-Texas Pipe Line Co. in East Texas.

* * *

The attempt of Oklahoma City University to confer an honorary degree upon Will Rogers drew from that humorist one of his characteristic replies. "What are you going to do, make a joke out of college degrees?" he telegraphed. "They are in bad enough repute as it is, without handling 'em around to comedians. The whole honorary degree thing is the 'hooey'. I saw some college giving Mellon one and he is a million bucks short. I got too much respect for people that work and earn 'em to see 'em handed around to every notorious character. I will let Oolagah (Okla.) kindergarten give me one, D. A. (Doctor of Applesauce)."

* * *

Lee A. Adams, former scout for the Carter Oil Co. and more recently associated with a daily oil reporting service in Tulsa, has joined the scouting forces of the Sinclair Oil & Gas Co. in East Texas. He will be stationed at Tyler.

* * *

John Campion, formerly head of the Campion Oil Co., prominent marketing company, of Tulsa, died at Roswell, N. M., May 16. He was in business in Tulsa from 1915 to 1928. In recent years he operated the Valley Refining Co. at Roswell. He was 45 years of age and is survived by his father, John A. Campion, Tulsa and his brother, Edward S. Campion, Chicago. Burial was in Chicago.

Stanolind O. & G. Ends East Texas Contract

TULSA, May 23.—With completion of a contract to purchase East Texas crude oil at 30 cents per barrel, made before the posting of the Mid-Continent price in that area, the Stanolind Oil & Gas Co. has withdrawn as a buyer for the present. Development of production in conjunction with Simms Petroleum Co. in sufficient quantity to fill Stanolind's present requirements makes it unnecessary to contract for other oil.

Stanolind Crude Oil Purchasing Co., the general buying agency for Standard Oil Co. of Indiana, is not and has not been a purchaser in East Texas. The crude which Stanolind Oil & Gas Co. has been buying was for the account of the Pan-American Petroleum & Transport Co., contolled by the Indiana company.

Major Buyers Take 25% East Texas Crude at Posted Prices

By Paul Wagner

N. P. N. STAFF WRITER

HOUSTON, May 23

APPROXIMATELY 25 per cent of the more than 300,000 barrels of current crude oil production in the Sabine Uplift region of East Texas is moving through six major-company channels posting the Mid-Continent schedule of 63 to 65 cents a barrel for the gravity oil produced there.

Of the remaining 225,000 barrels currently produced daily, approximately 135,000 barrels is moving at contract, or sacrifice prices, in tank car shipments; and more than 50,000 barrels daily is being handled as common carrier oil by The Texas, Magnolia and Atlas pipelines. Refineries local to the region were handling 11,190 barrels daily. Estimates were that 30,000 to 40,000 barrels of crude daily was going into field storage this week.

Unofficial but reasonably accurate field statistics for the week ended May 23 indicate daily production averages of approximately 308,000 barrels from 547 producing wells compared with 257,425 barrels from 465 wells a week previously. State proration orders contemplate allowable production of 160,000 barrels in the district.

Stock accumulations may not be expected to continue in East Texas, however, as steel storage room is limited, larger-type operators generally are unwilling to accumulate crude in the field and the smaller producers cannot afford to do so. The alternative then becomes two-pronged, either soon to bring better conformance to proration orders or to find additional under-the-market outlets for the excess crude produced.

Shippers moving oil on low price crude contracts, ranging from 20 to 45 cents a barrel, may be either producers or buyers maintaining their own railroad loading racks, or they may be short line gathering system operators who conduct tank car brokerage businesses.

The six major interests posting Mid-Continent prices for East Texas prorated oil, and themselves abiding by state proration orders, are the Arkansas Fuel Oil Co., of the Cities Service group; the Gulf Production Co.; Humble Oil & Refining Co.; Magnolia Petroleum Co.; Sinclair-Texas Co., and The Texas Co.

Together, these companies were handling 35,197 barrels of controlled oil daily from the Sabine Uplift region, May 20, and 37,161 barrels daily in "outside" purchases. The Texas Co. was quoted by Ray W. Richmond of Tyler, umpire-in-chief for the East Texas district, as now ready to purchase up to 10,000 barrels daily at Mid-Continent prices; and the Gulf Companies were described as getting ready to handle a total of possibly 20,000 barrels daily, controlled and purchased.

As of May 20, the Gulf was handling 8623 barrels owned and 340 barrels daily purchased oil, a total of 8972 barrels; The Texas Co. was handling 788 barrels owned production. Its affiliated pipeline was moving 40,246 barrels daily from the district, but all except the aforementioned quantity moved in common carrier shipments.

Magnolia Petroleum Co. was moving 5435 barrels daily of owned and 3587 barrels of purchased oil, a total of 9022 barrels. Its pipeline movement of 29,763 barrels daily was further made up in common carrier shipments.

The Arkansas Fuel Oil Co. handled 15,460 barrels daily, consisting of 5800 barrels owned and 9660 barrels purchased. Its purchases were to be increased somewhat, however, in consequence of plans to connect with wells in the Lathrop area where Stanolind Oil & Gas Co. had been buying before retiring from East Texas purchasing.

Stanolind, which had purchased 32,900 barrels daily in the week ended May 6 and 18,724 barrels in the week ended May 13, announced it would take no more "outside" oil in East Texas when present contracts are completed. It recently completed taking 600,000 barrels at 25 cents a barrel, loaded on tank cars by the MacMillan Petroleum Corp.

Stanolind will continue, however, to handle oil from its

Ask Buyers to Refuse Unprorated Oils

By Telegraph

HOUSTON, May 25.—Crude buyers and transporters in East Texas have been asked by the state railroad commission to refuse to handle any oil not produced strictly in accordance with state proration orders. The commission said that conditions in that area are such that they "cannot continue long without completely breaking up proration with consequent disastrous results."

The state legislature adjourned Saturday without action on the proposed statute strengthening the powers of the commission. This permits recalcitrant operators to continue defeating proration through injunctions. A movement for a special session is under way.

Fred Sehmann, secretary of the North Texas Oil & Gas Association, has sent the governor a resolution asking a special session to pass a law providing for curtailment to market demand and provide immediate hearings on injunctions. The resolution mentions East Texas as marketing 200,000 barrels daily below posted markets.

properties owned jointly with Simms Oil Co., of Dallas.

Sinclair-Texas Co., which May 12 abandoned its older day-to-day buying at low prices, thereupon posting the Mid-Continent schedule, is now handling 1863 barrels owned and 4631 barrels purchased oil.

HUMBLE OIL & REFINING CO., was handling 12,688 barrels owned and 18,934 barrels purchased, or a total of 31,622 barrels daily. It now has two outlets from the region, one its 10-inch carrier system from Van field to Louisiana boundary connection with the Standard Pipe Line Co., Inc., and the other an 8-inch line connecting with the Humble Pipe Line Co. system at Boggy Creek, thence to the Mexia region. Only a part of the Van-Louisiana pipeline capacity is available for Sabine Uplift region crude.

Aside from the major companies mentioned the only other trunk pipeline serving the Sabine Uplift region is that of the Atlas Pipe Line Co., operating an 8-inch system to Shreveport connection with the older Shreveport-El Dorado Pipe Line Corp. facilities, in southern Arkansas. It is reported handling mainly common carrier shipments, most of which oil leaves the field at lower than posted prices. It was handling 17,886 barrels daily, May 20, part of its shipments going to the affiliated Spartan Refining Co., at Shreveport, and some of the other oil moving to account of the Ouachita Valley Refining Co., at El Dorado.

Refineries local to East Texas were handling 11,190 barrels daily, as follows: East Texas Refining Co., at Longview, 4001 barrels, and at Friar Switch (Henderson), 4400 barrels; Beacon Oil & Refining Co., Henderson, 2175 barrels; Butler & Calhoun, Overton, 614 barrels.

Tank car shipments daily included 3677 barrels average from Houston Oil Co. of Texas, loaded at Kilgore; Marine Oil Corp., Kilgore, 6100 barrels; Central Pipe Line Co., Overton, 6719 barrels; Oriental Oil Co., Kilgore, 321 barrels; Petroleum Marketing Co., Warner-Quinlan subsidiary, Kilgore, 4286 barrels.

Sabine Pipe Line Co., Kilgore, 6293 barrels; Shell Petroleum Corp., controlled oil, 1883 barrels; Sinclair-Texas Pipe Line Co., Kilgore (figured in aforementioned major purchases or runs), 2618 barrels; Stanolind Oil & Gas Co., Kilgore, 2049 barrels; Butler & Calhoun, Overton, 513 barrels.

Crown Pipe Line Co., Friar Switch, 6630 barrels; Gulf Coast Pipe Line Co. (Moody-Seagraves), Friar Switch, 13,875 barrels; Illinois Pipe Line Co., controlled crude of Mid-Kansas Oil & Gas Co., subsidiary of Ohio Oil Co., Arp., 450 barrels; Inland Water Ways Pipe Line Co., Friar Switch, 2540 barrels; Panola County Pipe Line Co., Friar Switch, 761 barrels.

Petroleum Marketing Co., Friar Switch, 8299 barrels; East Texas Refining Co., Friar Switch, 4565 barrels; Cranfill-Reynolds Co., Moody-Seagraves subsidiary, Longview, 8985 barrels; East Texas Refining Co., Longview, 4398 barrels.

MacMillan Petroleum Corp., Camp Switch, near Longview, 3893 barrels; Pilot Oil Co. (Cranfill & Germany), Willow Springs, 10,985 barrels; Simms Oil Co., Willow Springs, 7766 barrels; Shell Petroleum Corp., Willow Springs, controlled oil, 1268 barrels; Tyler Pipe Line Co., Tyler, 11,190 barrels.

THE Tyler Pipe Line Co., in which Clint W. Murchison of Dallas is interested with others, including the Taylor Refining Co., at Taylor, has been shipping to Sinclair Refining Co., at Houston; the Taylor Refining Co.; the Liberty Pipe Line Co., care of B. T. McNeill, Texas City; the Mexican Petroleum Corp. of Louisiana, at Galveston; the Kent Refining Co., at Angus, Texas, and the Star Oil & Gas Co., at Superior, La.

Included in MacMillan shipments have been consignments to Atlantic Refining Co. subsidiaries at Atreco; Ouachita Valley Refining Co., El Dorado; British American Oil Co., Toronto; Atlantic Pipe Line Co., Beaumont; and the Republic Oil Co., of Texas, at Texas City.

In addition to tank car movements to B. T. McNeill at Texas City, Pilot Oil Co. has been transferring about 5000 barrels daily from its own short pipeline to the Atlas system in Gregg county for shipment into the Shreveport district. The oil is coming from one non-prorated well exploited at approximately 13,000 barrels daily in the Longview area.

Pilot, MacMillan and Cranfill-Reynolds, each with one well prior to May 20, were the only companies in the Longview area then failing to observe proration, according to A. B. Capers, Gregg county umpire.

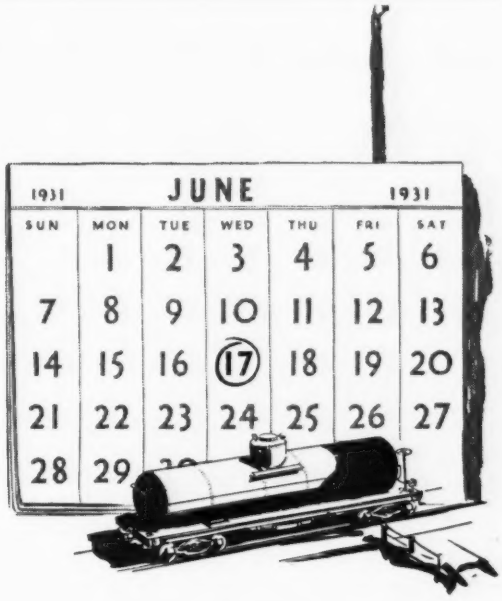
In the Kilgore area, Rusk county, Umpire-in-Chief Richmond named as proration violators the following: Cranfill-Reynolds Oil Co., two wells; Burton Drilling Co., two wells; Luling Oil & Gas Co., two wells; Upchurch and others, two wells; N. W. Hunter and others, two wells; Horseshoe Syndicate, one well.

JOINER district operators named by Richmond as violators are George Anderson, Fort Worth, three wells; C. P. Oil Co., Roy I. Carter and others, three wells; Imperator Oil Co., one well; Cranfill-Reynolds, one well; Johnson and others, one well; MacMillan Petroleum Corp., one well; Merrick Drilling Co., two wells; Petroleum Marketing Co., three wells; Snetcher & Pittman, one well; Golding & Murchison, one well.

Most operators named as violators of proration orders have injunction suits pending to restrain the Railroad Commission of Texas in district court at Austin, either as individual companies or for joint account properties, except that MacMillan Petroleum Corp. is testing curtailment in federal court.

The MacMillan injunction suit, called May 21 at Houston before Judge J. C. Hutcheson of the United States Circuit Court of Appeals and two federal district judges, was set over until June 24 for hearing on its merits. MacMillan wells, in the meantime, will be exploited without molestation or penalties of the railroad commission.

Proration is made inoperative similarly by the various injunctions filed in state courts, but counter moves by the attorney general's department to collect penalties are pending in suits filed a week ago in Gregg and Rusk counties against several of the companies.



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East Texas Causes Apprehension As to Oklahoma Proration

TULSA, May 23

PRORATION in the Mid-Continent is facing as critical a test as has been applied to it thus far, in the opinion of a number of oil company executives. The reason for this condition, like the reason for many other things today, is found in East Texas. The failure there thus far to obtain adherence to the program of curtailment is causing a further backing up of crude oil in other districts, including Oklahoma and Kansas. The price structure is undoubtedly endangered at this time.

A reduction was posted in southern Oklahoma May 22 by the American Refining Properties, Wichita Falls. Its new schedule begins with the grade below 31° for which it pays 30 cents. A two-cent per degree differential brings its highest grade to 48 cents, this being the grade 39° and above. It is a reduction of seven cents from the prevailing schedule in the nearby Wichita Falls district. The same company also posted a flat price of 55 cents per barrel less pipeline charges for Wichita Falls district crude, meeting a reduction posted May 15 by Primrose Refining Co.

While the American buys only about 1000 barrels daily in southern Oklahoma, its action is nearly certain to be followed by other independent companies in the district. The same course has been followed twice before within the past eight months, small refineries initiating the price reductions and these cuts later being recognized in new postings by major buyers.

Will proration hold in the Mid-Continent in the event that lower prices are posted? Will a lowered price per unit cause producers to attempt to realize their present gross income by producing more units?

These are questions that fill the air today. There is little doubt that plenty of operators will want to increase their production from present prorated properties, and this in the face of the attempt now being made by the State Wide Proration Committee in Oklahoma to obtain an order from the corporation commission fixing Oklahoma production at 550,000 barrels for four months from June 1. Hearing is to be held on this at an early date.

To realize such a figure, it would be necessary to hold Oklahoma City to something like 150,000 barrels daily. That will meet with plenty of opposition. In fact, a petition was filed the past week asking that an increase be given that pool, boosting it to 181,193 barrels daily. Wirt Franklin filed the petition and hearing will be held by the commission on May 28.

It is requested that the field be classified as to its sources of production. The petition asks that the Arbuckle lime wells, the oldest part of the field, be permitted to produce 75 per cent of their possible flow; that the lower Simpson sand zone be given an allowance of 10 per cent and that the South Wilcox sand zone, in the southern part of the field, be permitted 10 per cent also.

THE prolific North Wilcox zone, which is the area wherein so many town-lot wells have been drilled, is recommended for a three per cent production. The application sets forth that the close spacing followed in the North Wilcox zone and the gauging of one well at a time has resulted in the building up of potentials per 10-acre unit that are disproportionate to the rest of the field and that it is discrimination to permit this area to produce on the same basis as the other parts of the field which, for the most part, has been drilled on basis of one well to 10 acres.

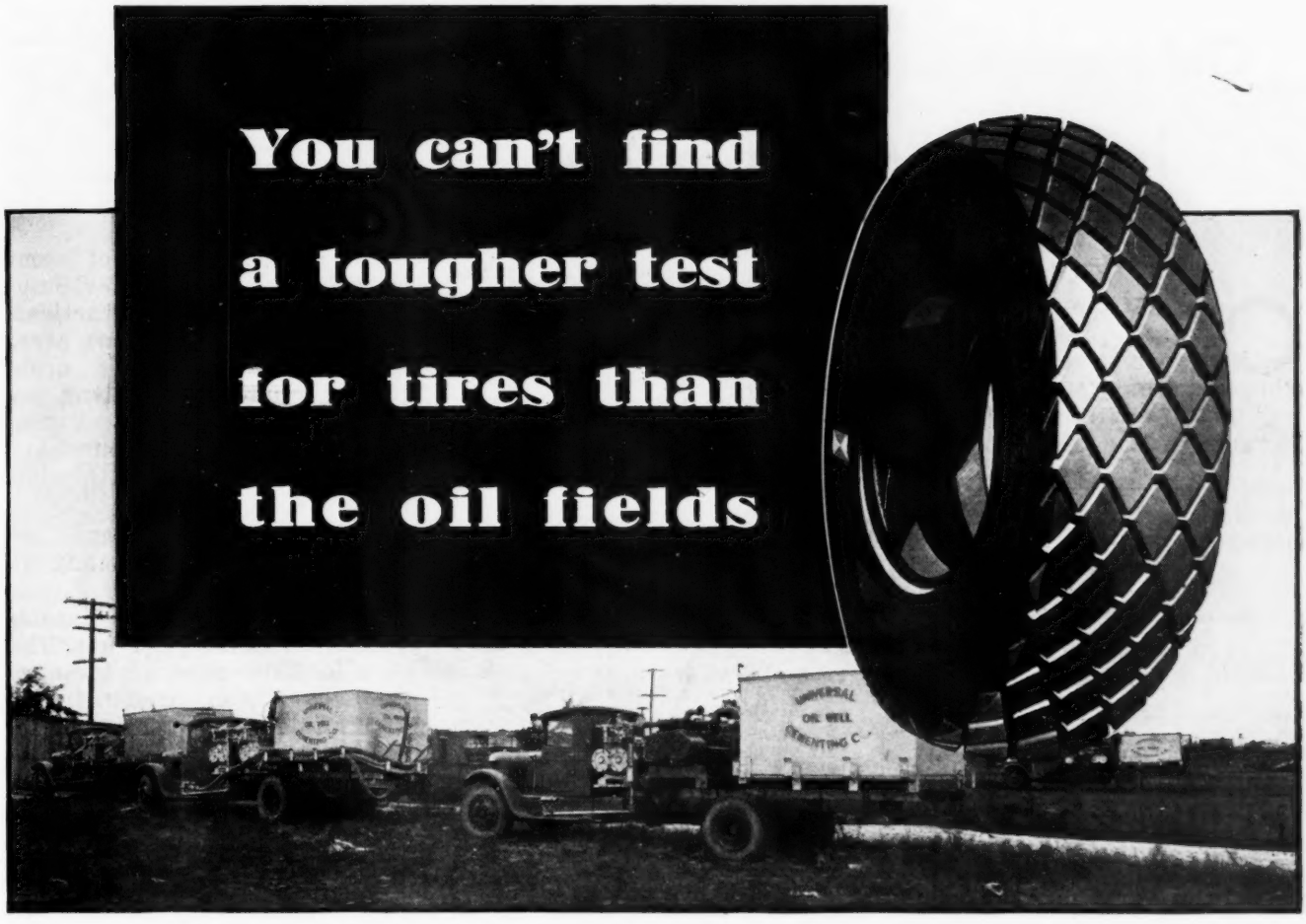
The State Wide Proration Committee on May 13 said that its findings included the recommendation that "for the present there be no change in the allowable production from the various pools or areas. . . ." Obviously, if the Oklahoma City allowable is to be increased, a cut-back will be necessary somewhere else, if the state is to be held to 550,000 barrels. It has exceeded this figure in recent weeks.

The Oklahoma City market, however, has been reduced the past week. The daily average pipeline runs from the area for the week ended May 11 totalled 207,031 barrels and for the week ended May 18 they were 172,961 barrels.

Principal reduction in takings was made by the Stanolind Pipe Line Co. This Standard of Indiana company was taking 40,000 to 50,000 barrels daily; it has reduced to 27,000 barrels daily. A factor influencing its reduction is the fact that it is emptying its long trunk line from Teapot Dome to Freeman, Mo. It has been leased to a gas company and the oil in the line, together with that in working tanks at pipeline stations, is being moved to Standard of Indiana refineries.

MID-CONTINENT observers, on the whole, see some difficulty ahead in maintaining proration at its present rigid figure unless speedy action is taken in East Texas to curb the output there. Court action to interpret the authority of the Texas railroad commission is several weeks away. In the meantime the order of that commission on East Texas is not being enforced.

Many Oklahoma producers favor meeting the East Texas situation by letting price be the sole determining factor; others are as firmly of the opinion that rigid proration should be continued so that each operator would get his proportion of what market there is as they have been in the past. And there are some who are having their troubles in hanging on under any conditions. The next two or three weeks will see some determination of policy for the Mid-Continent, both as to price and proration.



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Oklahoma-Kansas Drilling Down Over Fifty Per Cent in Year

Staff Special

TULSA, May 23

OKLAHOMA, Kansas and Texas, the states of greatest activity east of California, have steadily cut the number of drilling operations. Because of East Texas, the fall in activity in Texas has nearly been wiped out since the first of the year, but even that boom has not been sufficient to bring field operations to the level of a year ago.

In Oklahoma the field work has dropped to less than half the total of operations a year ago. Totals are 412 as of May 15 last compared to 954 a year before. The number of drilling wells dropped from 609 as of May 15, 1930 to 171 as of May 15 last. Total operations, by districts, were as shown in the table below.

The Shawnee district embraces all of the Greater Seminole area and work is practically at a standstill in that area. In the Oklahoma City area, which includes wildcatting operations in the several counties near the field, operations have fallen to less than half what they were a year ago.

Kansas operators have restricted work by more than 50 per cent of the total of a year ago. For brevity, this state is divided into three districts. The Wichita district, which includes the Ritz-Canton area of McPherson county, is the most active at this time, exceeding operations of a year ago. The Hays district embraces all of the territory commonly known as Western Kansas, while Eureka takes in the older areas of the state, including Greenwood and Butler counties. The comparative figures on Kansas are as shown.

The same curtailment applies to New Mexico and to all Texas districts except the East Texas area. Comparative figures are shown in the table.

Oklahoma Operations

May 15, 1931

District	Locs.	Rigs	Drilling	S. D.	Total
Enid	....	5	16	14	35
Pawhuska	2	4	16	18	40
Sapulpa	6	11	21	31	69
Muskogee	....	9	29	19	57
Okla. City	12	24	56	34	126
Shawnee	2	8	13	3	26
Lawton	....	3	7	20	30
Ardmore	1	5	13	10	29
	23	69	171	149	412

May 15, 1930

Enid	1	3	23	19	46
Pawhuska	7	9	38	8	62
Sapulpa	10	13	86	28	137
Muskogee	....	13	41	20	74
Oklahoma City	24	42	218	11	295
Shawnee	11	35	109	29	184
Lawton	10	7	49	24	90
Ardmore	3	6	45	12	66
	66	128	609	151	954

Kansas Operations

May 15, 1931

District	Locs. and Rigs	Drlg.	S. D.	Totals
Eureka	6	23	14	43
Wichita	38	39	20	97
Hays	8	21	5	34
	52	83	39	174

May 15, 1930

Eureka	45	147	34	226
Wichita	15	29	8	52
Hays	20	53	15	88
	80	229	57	366

Texas-New Mexico Operations

May 15, 1931

District	Locs.	Rigs	Drilling	S. D.	Totals
Eastland	22	12	64	68	166
Amarillo	4	11	30	18	63
Wichita Falls	19	11	28	64	122
West Texas	10	16	60	85	171
East Texas	42	258	369	72	741
New Mexico	3	1	10	17	31
	100	309	561	324	1294

May 15, 1930

Eastland	48	37	225	142	452
Amarillo	34	20	119	23	196
Wichita Falls	46	32	130	54	262
West Texas	39	28	143	116	326
New Mexico	7	4	52	8	71
	174	121	669	343	1307

Cashin Opens Houston Consulting Office

HOUSTON, May 21.—D'Arcy M. Cashin, recently in charge of land and geological activities of Warner-Quinlan Oil Co., of Texas, with Houston headquarters, retired May 1 to enter business for himself. Mr. Cashin will operate on his own account in south Louisiana and East Texas, in addition to consulting geological practice. He opened offices in National Standard Insurance Bldg.

Before joining the Warner-Quinlan interests, Mr. Cashin had been land and geological director of the Navarro Oil Co., and previously was in the geological department of the Humble Oil & Refining Co.

ADVERTISING PAGES REMOVED

Handling «Outside Oil» Becomes a Problem For Kettleman Hills Association

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, May 23 DEVELOPMENTS now brewing between major and independent operators in the Kettleman Hills field may determine the success or failure of the Kettleman North Dome Association and its cooperative development plan in this field.

With an actual eight-hour gauge on Superior Oil Co.'s Huffman, on the north dome, indicating a rate of flow in excess of 20,000 barrels daily, independent operators with minority interests are beginning to wonder where they come in.

On fee land outside the jurisdiction of the association, Superior Oil Co. has a potential production of over 30,000 barrels per day from Kettleman Hills. Petroleum Securities Co., also on fee land outside the unit plan of development, has a potential production of about 20,000 barrels per day.

Actual production by these two companies and several others operating on fee land not under the option of the association can be regulated somewhat by the pipeline takings of major companies. Union Oil Co., which is taking Superior's oil from the Huffman lease, is expected to limit the daily runs to about 16,000 barrels, and Associated Oil Co., taking the Petroleum Securities Co. Felix production, is expected to set a limit on the amount of the 36 gravity oil it will handle. Whatever amount of this outside oil is taken, however, may mean that much less oil of association members which the pipelines can handle.

Under the terms of the unit plan agreement each individual operator has a choice of the manner in which he will receive his percentage of the association production. He may either take his percentage of the month's output direct and make his own deal for removing it from the field, or he may instruct the association to act for him as an agent.

The question has now arisen among the independent operators as to the outlets available to them and as to their rights in case the association cannot dispose of the oil. It appears to some that, with major pipelines filled to capacity with oil from the "outlaw" operators or from major companies in the association who elected to handle their own oil, the association might not be able to move oil furnished it as an agent, or that it might be forced to sell this oil at below the current market price in order to move it.

INFORMAL meetings were held the past week in an effort to obtain from the association a definite guarantee that individual members would receive prevailing prices for their prorated share of the output and that some form of outlet would be provided. Failing to obtain this, a minor group of the association membership, representing 30 to 38 per cent, is contemplating the feasibility of laying a stub line out of the field. This line would probably join the old Pan American line (now Richfield) that runs the length of the San Joaquin Valley and into the Los Angeles Basin.

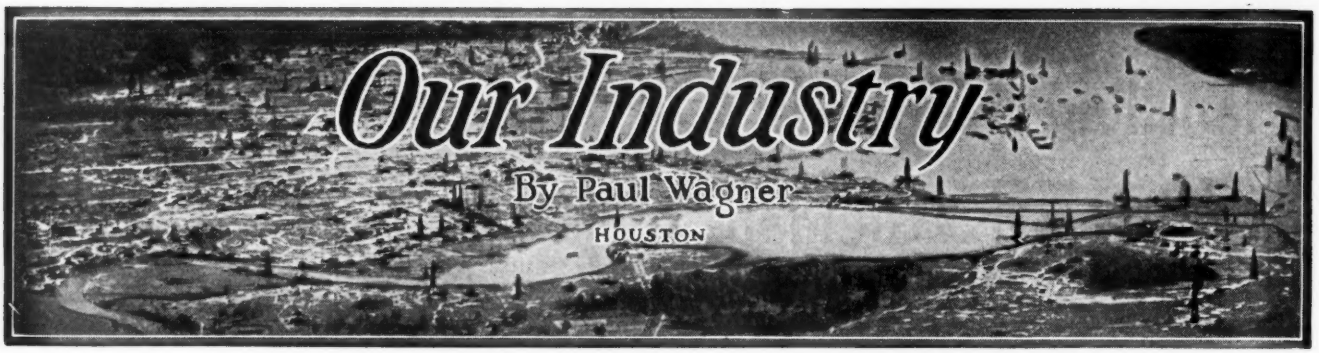
This connecting line, approximately 80 miles long, which would cost in the neighborhood of $200,000, would serve as a common carrier and would give the smaller operators without pipeline outlets a means of getting their Kettleman Hills oil to the Los Angeles Basin refineries, or at least into an open competitive market.

Richfield Oil Co., under Receiver McDuffie, former president of Pacific Western Oil Co., would probably receive Pacific Western's share of the Association's production. Such a move would be favorable to Richfield and might be a deciding factor in its present period of rehabilitation.

Several large members within the association are displeased with the manner in which negotiations for the oil are being handled. Many were reluctant to join in the cooperative move but did so on the belief they would be provided with an outlet for their production through pipelines owned by the major purchasing companies. But it becomes another question when these pipelines are nearly filled to capacity with oil produced by operators that did not join the association.

A solution to the Kettleman Hills problem is now recognized as necessary before the statewide conservation program can be put on a stable basis, and various proration committees are now working on tentative plans aimed at an equitable proration and yet full control of the Kettleman Hills field.

OFFICIALS of the recently organized Oil Producers Sales Agency said last week that they had signed up 146,000 barrels of the state's daily actual production. This cooperative marketing group had an original objective of approximately 250,000 barrels, or about 46 per cent of the state's present production. Experts believe that this agency will prove valuable in stabilizing the California situation, providing it can gain the support of at least 75 per cent of the independent production, which now is about 46 per cent of the state's total.



B. G. VON ROEDER, recently transferred to the land department of the Sinclair Oil & Gas Co., at Houston, was formerly South Texas division chief civil engineer. He was succeeded in that position by Karl K. Kreamer, who is temporarily assigned to East Texas work in conjunction with construction of a 100-mile transportation artery from the Sabine Uplift region to Mexia connection with the Prairie Pipe Line Co.'s system, under contractual arrangements for crude oil movements.

Mr. Von Roeder has been connected with the South Texas organization of Sinclair for many years. Previously, he was identified with the Southern Pacific railroad.

* * *

The last unorganized county in Texas is about to become self-governing. Loving county, in which the Wheat oil field of West Texas is located, was officially organized by the Reeves county commissioners court and election of officers to administer its affairs authorized. J. J. Wheat and B. F. Ramsey led the group of 130 citizens petitioning for organization. Mentone will be the county seat.

* * *

Carroll H. Wegemann, chief geologist of the Pan American Petroleum & Transport Co., New York, spent a part of May in Mexico, inspecting properties of the subsidiary Huasteca Petroleum Co. He visited Tampico and Mexico City, accompanied by his daughter.

* * *

Tom Bailey, treasurer of the Transcontinental Petroleum Co., Mexico operating subsidiary of Standard Oil Co. of New Jersey, is now on a two months' vacation at his old home in England.

* * *

W. M. Maddox is now traffic manager of the Magnolia Petroleum Co., at Dallas headquarters, recently succeeding H. E. Spaulding, retired. Mr. Maddox has been with the Magnolia since 1911, joining the company as order and rate clerk at Corsicana. In 1917, he was transferred to the treasury department, where he remained until appointed assistant traffic manager in 1920.

* * *

Lucey Petroleum Corp., of Dallas, headed by Capt. J. F. Lucey, has opened East Texas field operating offices in the Kelly building at Longview.

* * *

R. C. Amidon, chief clerk to W. H. Buckley, superintendent of the Arkansas-Louisiana Pipe Line Co., Shreveport, is back at his office after an absence of several months.

B. G. Von Roeder

* * *

J. K. Graham has been transferred from the Pure Oil Co.'s civil engineering department at Houston to the production engineering division at Fort Worth.

* * *

Edward J. Kennelly of The Texas Co.'s Wichita Falls producing division is expected soon to return home after an extensive European trip.

* * *

Southern Division Employees' Association of the Standard Gasoline Co. (California) has named 1931 officers as follows: G. M. Liljenstein, president; W. M. Flesher, vice president; K. Oertel, secretary-treasurer.

* * *

Ned Scardino and Theodore Say, formerly chemists at Port Arthur, have been transferred to the Lockport Works of The Texas Co., refinery department.

* * *

Alec S. Feild, general sales manager of the Naylor Pipe Co., and formerly a division production superintendent of the Shell Petroleum Corp., has returned to Chicago headquarters after an extended trip to the Pacific Coast. He visited in East Texas on his way home.

* * *

Frank W. Kirk, vice president and general manager of the Houston Pipe Line Co., subsidiary of Houston Oil Co. of Texas, has been elected president of the South Texas Chamber of Commerce. Before joining the Houston organization he was a superintendent of the Lone Star Gas Co.

* * *

L. P. St. Clair, president of the Union Oil Co. of California, Los Angeles, has been elected vice president of the Western Asphalt Association.

Lower Royalties Necessary if Natural Gasoline Industry is to Survive

By Dr. E. R. Lederer*

(Presented before Natural Gasoline Association of America, Tulsa, May 19-21)

OUR activities depend almost entirely on the producer of oil and the refiner. We are only too glad to join with them in every sensible effort. We have cut our operating expenses to such a low level that a few years ago would have seemed impossible. But there is a limit for such curtailment, if we are to maintain the quality of our product, provide for safe operation and the welfare of our employees. It is only fair that the pressure, which is brought upon us by the low price refiner is willing to pay for our product, will have to be shared by the producer, from whom we buy the gas.

A readjustment of the present royalty structure will have to take place if we are to stay in business. Some plants in Oklahoma and Texas, which could not operate economically due to lack of sufficient volume of gas or efficient modern equipment, had to shut down. More are likely to follow.

The initial steps toward "unitization" in certain settled pools are most commendable. We can accomplish in our industry by such co-operative and constructive arrangements the same helpful results as the producers effected. Let the best and most efficient plant operate, pool your raw material, make the best possible royalty arrangement with the producers and farm owners, and give everybody a chance for a living he is entitled to.

This plan certainly should be adopted in the future in all fields, settled or flush. Co-operation of this kind is not only charitable, it is the only sensible thing to do, as it follows the natural ironclad law of economics. And no one, not even the greatest, is above these laws; we see it every day—how the struggle of the smaller fellow, who is making a desperate effort to stay on the surface, but due to lack of means and assistance, loses strength and ground and has to dump his gasoline on the market, affects our entire price structure.

THE natural gasoline industry has been setting its house in order by reducing expenses in all possible ways. It has "unitized" its plants, building large co-operative plants instead of smaller competitive plants. It has been active in developing by-product markets.

But these economies have not been enough to bring prosperity, Dr. E. R. Lederer, retiring president of the Natural Gasoline Association of America, points out in his annual address. To survive the industry must have lower royalty charges.

Dr. Lederer's address is published in part herewith.

We can reduce the output of our plants by "super-stabilization," and produce gasoline with such high recovery and low vapor pressure as to attract the refiner and enable him to pay us at least the cost of our gasoline so we can break even; this will reduce current production and a considerable percentage of our output could be taken off the market in this manner.

I rather look with disfavor on the efforts of some natural gasoline manufacturers to blend their own brand of motor fuel by buying cheap naphtha and bringing it up in volatility with their own natural. Frequently such a product is not up to specification, is poor in performance and tends to discredit natural gasoline. It also brings them in direct competition with the refiner. Such products are generally sold below the legitimate posted price and add to the confusion and instability of the market. However, we cannot blame a gasoline manufacturer for securing in this manner an outlet for his product which the refiner will not or cannot buy.

During the past year it has become evident that prices for natural gasoline are entirely interdependent with those of motor fuels. We used to enjoy, in former years, a few months of higher prices due to increased seasonal demand for more volatile gasoline, which lowered our stocks and available supply. Since May, 1929, prices of natural gasoline have been below those of U. S. Motor Gasoline.

The refiners disregard now, more or less, the question of superior quality, that the admixture of our product would give his gasoline. He is forced to use a very sharp pencil before he can buy anything! Unless our product can be delivered at the refinery at a lower price than he is getting for his motor fuel, he cannot afford to buy our natural. Furthermore, he cannot be expected to put out cash to fill up his storage with a blended motor fuel and face some evaporation loss and possibly lower prices in the future, when he cannot move his product at all, or at a price which means certain loss and ruin.

Statistically, our industry has remained in a comparatively favorable position. The Mid-Con-

*Vice-President Texas Pacific Coal & Oil Co., Ft. Worth, Tex., Retiring President, National Gasoline Association of America.

tinent area has shown a substantial decline in production of natural gasoline during the latter part of 1930, while California surpassed all other fields through the developments in Kettleman Hills. It produces now, 37 per cent of the total U. S. production of natural gasoline. Oklahoma is second with 28 per cent, Texas third with 22½ per cent.

THE total daily production shows a healthy decrease. The Bureau of Mines figures for March 1931 give it as 5,484,360 gallons a day as compared with 6,199,200 gallons for the same month in 1930, a decrease of 11.5 per cent. However, domestic demand has decreased from 12.2 per cent of all gasoline produced in 1930, to below 10 per cent for this year.

Stocks of natural gasoline at the end of March, 1931, were 895,000 barrels as compared with 684,000 for the same date in 1930, an increase of 211,000 barrels or 23.5 per cent. Since October, 1930, when stocks and production showed for the last time a healthy balance with demand, we have piled up stocks in spite of proration and curtailment in production, until we have reached the above dangerous surplus.

The sudden drop in gasoline exports from 5,885,000 barrels in March, 1930, to 2,711,000 barrels for March of this year, was a contributing factor, and I am afraid the European countries are lost for us as long as the influx of cheap Russian and Roumanian gasoline and natural continues.

Several of our members have found a new outlet for part of their products and by-products in the newly created and developed liquefied gas industry. Research along these lines started a few years ago, coupled with the demand of the refiners for highly stabilized natural gasoline, has developed the equipment necessary for sharp and selective fractionation and separation of butane, propane, hexane and octane.

Demand for these products in newly created markets is growing rapidly and the distribution for 1930 almost doubled the one for the preceding year (18,017,347 gallons for 1930 vs. 9,930,964 gallons for 1929). Our association, keeping abreast with these developments and co-operating with the natural gas division of the American Gas Association, appointed a Liquefied Gas Committee, which is now preparing specifications for liquefied petroleum products and for containers used in shipment.

Development of several large flush pools during the past year has caused a trend to larger plants, as more volume and capacity reduce the basic unit cost of the finished product; the largest plant was built in Los Nietos (Kettleman Hills) with a daily capacity of 100,000,000 cubic feet. Forty-five new plants, having a total capacity of 1,180,000 gallons of natural gasoline per day, (most of them in California, New Mexico, and in the Panhandle) were added. About 86 compression plants and 40 absorption and charcoal plants were discontinued.

California leads with 144 plants, having a capacity of 3,452,000 gallons, Oklahoma follows with 246 plants and 3,064,000 gallons, Texas is third with 143 plants and 2,218,000 gallons. These three states represent 84½ per cent of a total number of 1035 plants with a potential capacity of 10,516,000 gallons. It is obvious that a large number of these plants enumerated by the Bureau of Mines are shut down and many only operating at reduced capacity.

IN SPITE of all these adverse conditions, our association has continued work on a very comprehensive and diversified program. Several of the most important problems which were still under consideration at our last annual meeting were brought to successful conclusion.

I wish to mention in this connection especially the new standard casinghead gas contract which is now in general use by the industry. It enables every producer and gasoline manufacturer to avoid time and expense for drawing up individual contracts for each case and shortens study of contracts by executives and legal departments. It provides for a fair settlement based on the actual value of gasoline in the gas delivered and purchased.

This contract form should be of real benefit to our members. It also has been accepted by the Department of the Interior and the Department of Public and Indian lands. Great credit for this long, tedious and minute work is due our Gas Contract Committee, which has given its untiring efforts to this problem for the past years.

THE Gas Testing Committee has revised and rewritten our official test code for testing natural gas for gasoline content. They have recommended elimination of the oil absorption test method, revised the compression and charcoal methods and are co-operating with the American Gas Association in promulgating these codes. This committee has also verified our residue gas curve by collecting and digesting a mass of plant information. At the instigation of this committee, all codes and specifications of the association are now collected, carefully studied and corrected, and as soon as they are approved, they are being printed in Lefax form for the use by our members.

Our specifications and technical committees have combined their forces and talent and have completed a lengthy and most comprehensive research program, the result of which is our new specifications.

An entirely new grading system for natural gasoline; based on volatility and vapor pressure enables the refiners now to select the specific grade of natural most suitable for blending with his refinery gasoline in order to produce the best motor fuel for every season and any temperature conditions. Incorporated in these specifications are the results of Dr. G. G. Brown's research work for this association which was started in 1925, and reported to the petroleum industry in our annual reports of 1926, 1927, 1928 and 1929.

The final report was issued as Research Bulletin No. 14, May 1930, by the University of Michigan, in co-operation with our association.

Liquefied Petroleum Gas Industry Shows Phenomenal Growth in 1930

By G. G. Oberfell*

(Presented before Natural Gasoline Association of America, Tulsa, May 19-21)

IT HAS also been long realized that in the manufacture of gasoline from natural gas, fractions are extracted which are suitable for the production of liquefied petroleum gases. Until recent years, large scale production of liquefied petroleum gases was uneconomical due to the facts that the supply of natural gasoline was widely scattered and the extraction processes relatively inefficient.

Due to the increased supply of raw natural gasoline, the chief source of liquefied petroleum gases, and due to improvements in the technology of natural gasoline manufacture, it has been found necessary to market more stable grades of natural gasoline. The result has been that the volatile fractions removed from the raw natural gasoline have augmented the immediately available supply of raw material suitable for the manufacture of the liquefied petroleum gases.

Prior to the year 1926 the industry was looked upon and generally referred to as a "peanut business," and as far as marketed quantities of liquefied petroleum gas are concerned all of the companies selling these products still are peanut venders. However, certain definite accomplishments have been made during recent years, which give promise of really large scale marketed production.

As late as 1928 the butane-air process for small town plants was an idea unproven by extended commercial usage. Tank car shipments of industrial gas were unknown save in the imagination and belief of those few who have had faith in the developments of this huge potential market. Many of the early liquefied petroleum gas marketing companies encountered numerous operation difficulties, met with financial reverses and either dropped out of the picture or were refinanced from time to time.

While many of the possibilities for creating markets for large quantities of liquefied petroleum gases had been visualized many years ago, the extensive development of the potential outlets awaited the solution of the many technical problems having to do with the manufacture, transportation, and utilization of the products and the formulation and execution of plans pertaining to the merchandising of the commodities.

In 1926 Phillips Petroleum Co. carefully investigated the market possibilities for these gases and as a result of these investigations laid plans for extensive and conservative development work. Since that time practically every step in the liquefied petroleum gas industry from the gas well to the final utilization of the product, has been subjected to the scrutiny of the research engineer.

PROBLEMS pertaining to the manufacture of the products have been carefully studied, with the result that large scale operations resulting in the efficient recovery and production of liquefied petroleum gases, have been successfully put into practice. Consequently, products superior in quality have been put on the market. Difficulties of utilization at times formerly encountered due to variation in quality of product have been entirely eliminated.

Safe and economical means for storage of the products have been developed. Improvements have been made in the technique of handling, transporting, and pumping these highly volatile products with the result that the difficulties which were hitherto encountered in these operations have been overcome. Decided improvement has also been made in the technology and design of various regulators and control equipment necessary for the manufacture, handling, and utilization of these products. Noteworthy developments have been made in transportation equipment.

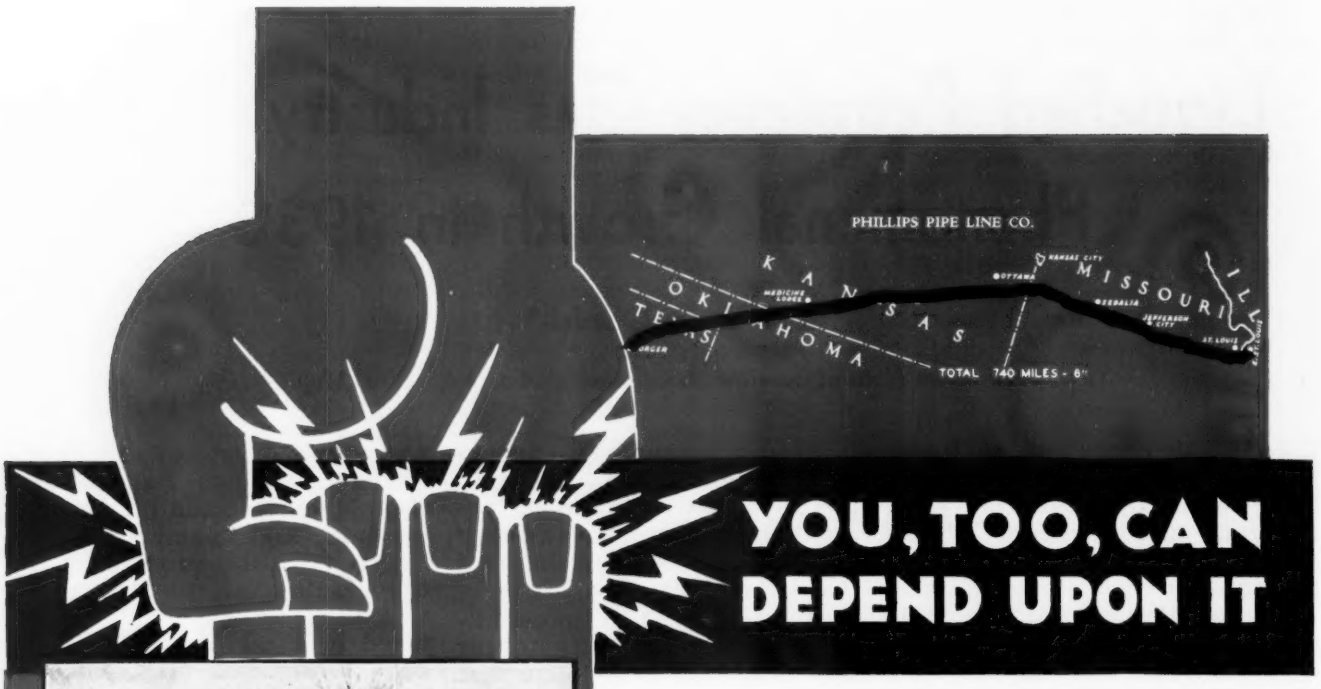
New testing methods have been developed and standard specifications for the products have been formulated. Work with regulatory bodies has resulted in permitting tank cars to carry a greater load than was formerly possible. Conditions of utilization of the products have also been the subject of considerable investigation. New and more efficient types of appliances, burners, and other combustion equipment have been developed, thus giving a higher efficiency of combustion than is ordinarily encountered with other gases.

The placing of these commodities in the refined oil classification by the several freight associations makes for outstanding economic development. Indeed, for all practical purposes it can be truthfully said that liquefied petroleum gas has gone from the "test tube to the tank car in the short space of three years."

Supply and Demand

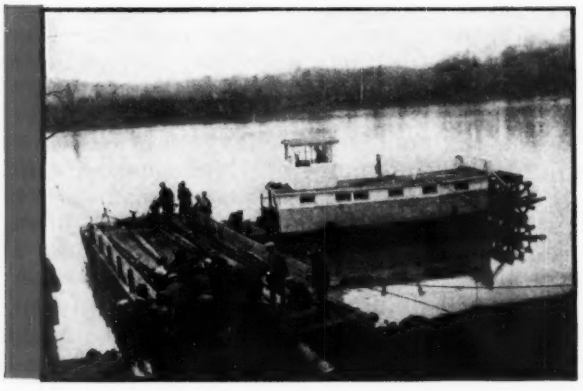
The saturated hydrocarbons propane and butane, are the chief liquefied petroleum gases from the natural gasoline industry. The same products, as

*President, Philfuels Co., Detroit, Mich.



YOU, TOO, CAN DEPEND UPON IT

At Borger, Texas, the eight inch line of the Phillips Pipe Line Company starts on its journey. It reaches out of Texas, through Oklahoma, Kansas and into Missouri. Near Jefferson City it reaches the bank of the Osage River. Lengths are coupled up, river clamps applied, a tug and barge come into service and before long 900 feet of pipe lies buried in the mud of the river bottom, and the line goes on to St. Louis.



For this out of the ordinary service—an out of the ordinary pipe was used—Republic Electric Weld. Long lengths meant fewer submerged joints. High tensile strength and ductility meant greater ease of handling. Sound structure and uniform thickness meant less danger of damage during progress of the crossing.

The experiences of users of Republic Electric Weld Pipe will guide you to a wise selection of pipe—one upon which you can depend without reservation.

REPUBLIC STEEL
CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

REPUBLIC
ELECTRIC WELD
MADE BY A NEW PROCESS CONTROLLED EXCLUSIVELY BY REPUBLIC STEEL CORPORATION YOUNGSTOWN, OHIO
PIPE

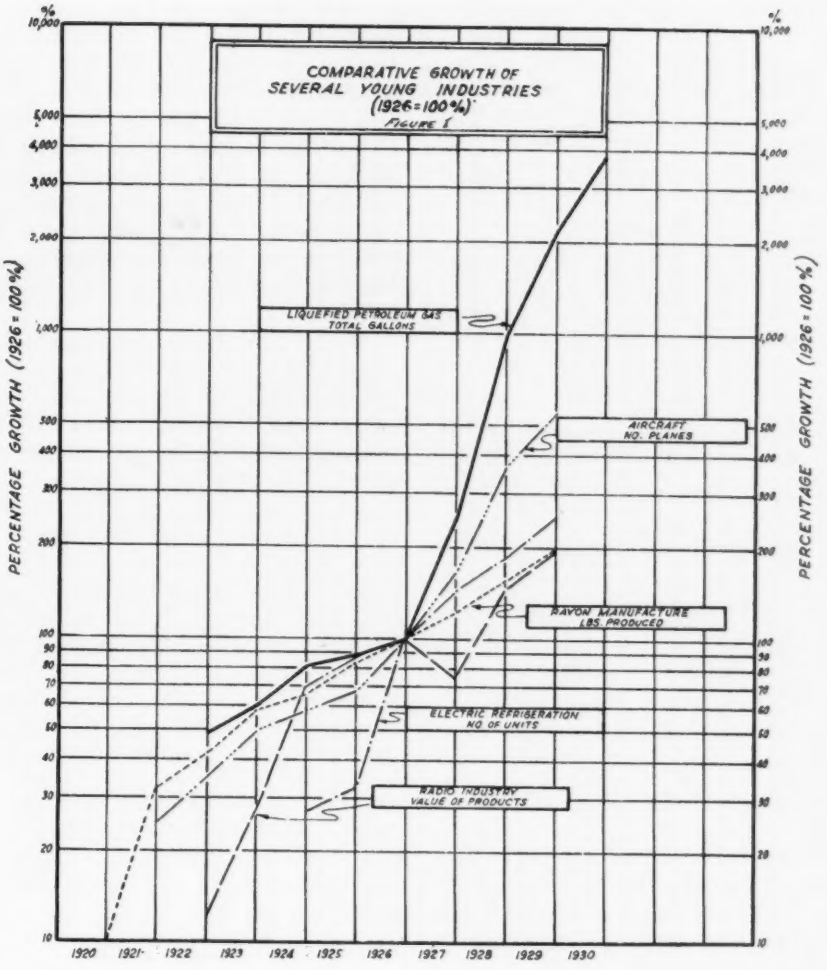
well as the corresponding unsaturated hydrocarbons, propylene and butylene, are present in gases from cracking stills in refinery operations. Since the trade recognizes no distinction between these substances, only the paraffin hydrocarbon terminology will be used hereafter in this paper. The terms, "propane" and "butane," are intended to include any hydrocarbon or hydrocarbon mixture whose boiling points are near to that of the paraffin in question.

Propane after being kicked about for several years is about to come into its own. It is in ill-repute in gasoline circles. No one seems to want it. Therefore, it has become a cheap wholesale commodity available from both the natural gasoline manufacturer and the refiner. Butane is more favorably received by the gasoline fraternity and while not being in really high standing is certainly not treated as an outcast.

It would appear to be only primer philosophy that the refiner will eventually pay no more for butane than the costs necessary to extract it from his refinery gases. These, of course, are the total costs including the value of the butane as a finished product for other purposes, or its value as a raw material for other processes. Notwithstanding this apparently simple analysis of the problem, it seems as if some of the natural gasoline manufacturers have failed to realize that to some extent such a situation has already occurred.

Likewise, one would judge that the refiner would not continue to purchase butane in the form of natural gasoline and sell it competitively with liquefied petroleum gas at a price below cost. Eventually the law of supply and demand will take care of any unsound practices. Consequently, the economic pressure will tend to favor the situation in which butane will be first available from the natural gasoline industry rather than from the refinery, since it will become a waste product at the natural gasoline plant before it does at the refinery and as such, will have little or no value as a raw material in its present chemical form.

After extracting sufficient butane for his own motor fuel requirements, the excess product will then become a waste product of lower value to the refiner and must of necessity seek an outlet in the liquefied petroleum gas markets or will be chemically changed into other products of higher market value.


COMPARATIVE GROWTH OF SEVERAL YOUNG INDUSTRIES (1926=100%)
FIGURE 1
LIQUEFIED PETROLEUM GAS TOTAL GALLONS
AIRCRAFT NO. PLANES
RAYON MANUFACTURE LBS. PRODUCED
ELECTRIC REFRIGERATION NO. OF UNITS
RADIO INDUSTRY VALUE OF PRODUCTS
PERCENTAGE GROWTH (1926 = 100%)
1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

The continued increase in use of oil cracking processes by the refiner will compel the natural gasoline manufacturer to sell still more stable grades of natural gasoline which, in turn, will increase the supply of liquefied petroleum gases available from the natural gasoline industry. The average motor fuel contains 0.3 per cent of propane and 4.7 per cent of butane.

The average daily consumption of motor fuel amounted to approximately 45 million gallons in 1930. This means that the motoring public last year daily consumed about 2¼ million gallons of liquefied petroleum gases in its motor fuel. Statistics indicate that as a very conservative estimate there is a daily potential production of at least 13 million gallons of liquefied petroleum gases from the natural gasoline industry.

However, this large supply is not immediately available. To begin with, the design and operation of the average natural gasoline plant is such that only a portion of the potential supply is extracted along with the raw natural gasoline. Another consideration in regard to the availability of liquefied petroleum gas lies in the fact that its production is more economically accomplished at the larger natural gasoline plants.

The amount of liquefied petroleum gases removed from the raw natural gasoline in preparing it for the market is about 1½ million gallons daily of which about 50 per cent is propane. Probably 50 per cent of this immediately available supply exists at plants too small to economically justify equipment necessary for the further separation of liquefied petroleum gas products. This means then, that there is available a supply of about 750,000 gallons daily, which will undoubtedly find

markets at existing competitive prices for the various uses to which they are adapted. When economic conditions justify, the supply of liquefied petroleum gases will be increased in proportion to the price level of the commodity.

Markets

Propane, which is a gas at atmospheric pressure and at temperatures above minus 40 F., is used chiefly as a fuel for domestic purposes. This product comprises the bulk of the so-called "bottled gases." Available data indicate that there are more than 13 million families in the United States in rural and suburban areas beyond gas mains that now use for cooking and water heating purposes, inconvenient forms of fuel such as wood, coal, gasoline, and kerosine. These applications of such low form value fuels are the foundation upon which an enormous bottled gas industry is being built.

These market possibilities, which deserve more energetic and more progressive merchandising efforts, have not as yet been given the consideration which they undoubtedly merit. The field for exploitation of fuel and appliance outlets is practically all virgin territory.

If only 10 per cent of the potential market is secured, the bottled gas phase of the industry would represent a retail fuel value of about $70,000,000 annually, which would require on the part of the 1.3 million customers an investment of about 200,000,000 for fuel burning appliances alone, not to mention the outlay for occasional replacement of appliances and for such accessory equipment as cabinets, cylinders, regulators, etc.

Butane, which is a gas at atmospheric pressure and at temperatures higher than 26 F., finds its market in the manufactured gas industry and in various other industries. This product is used as an enricher to increase the calorific value of certain gases, as a means for meeting peak load situations, and as the sole base material for the manufacture of gas for small towns where the installation of the conventional type of gas plant would not be economically feasible.

Butane is also used extensively as a gaseous fuel in many and varied industrial heating operations. The superiority of this high-grade gaseous fuel is most fully realized where the consumption is large and where an economical, clean and easily controlled fuel is advantageous. In addition high efficiency of combustion is made possible by the uniformity and purity of the product.

It is for these reasons that the industrial use of butane has been receiving such rapid recognition. When used as an industrial gas, it is, of course, in direct competition with the product of the manufactured gas industry. During the past few months several marketers have entered this field. In some instances prices equal to that of natural gasoline or lower have been offered, although the generally quoted price of butane ranges from 2.75 to 4.0 cents per gallon F.O.B. Group 3. On a strictly thermal basis butane at the above prices is in most cases cheaper than manufactured gas as evidenced by the following table of comparative prices:

Table 1

Comparative Prices of Butane and City Gas

Cost of butane at burner, cents per gallon (Delivered Price)	Equivalent cost of 530 B.t.u. city gas cents per M. Cu. Ft.
8.0	41.4
7.5	38.8
7.0	36.2
6.5	33.6
6.0	31.0
5.5	28.4
5.0	25.9
4.5	23.3
4.0	20.7
3.5	18.1
3.0	15.5

The butane-air process has supplied a long felt need for an economical type of gas plant for small towns and for this reason this type of plant has proved very attractive to the manufactured gas industry. A study of the statistics pertaining to towns in the United States without gas service reveals that there are 2423 towns each having a population between 1000 and 2500, and 667 towns each having in excess of 2500 inhabitants. Census reports place the total population of these groups at 3,727,362 and 2,540,592 respectively. This is an average population of 1538 inhabitants per town for the former group and 3809 for the latter.

Intensive competition for gas franchises in small towns has been taking place during the past year, and it is evident that the progressive utility companies and many individuals have fully realized that butane-air process plants form the background for sound investment because of the earning possibilities and the stability of income of this economical type of gas plant for small-town distribution systems.

In addition, the process affords a means of developing the gas loads in towns with a very small population pending the completion of many natural gas line and high-pressure manufactured gas line projects. The development of this large potential market for gas is only a question of time. The field is especially attractive to financiers, promoters, and appliance and equipment manufacturers since the economic values of these attendant activities are much greater than that represented by the fuel consumption, which in itself justifies the efforts of the liquefied gas producer.

The number of small town gas plants (butane-air) supplied with fuel by Philfuels Co. and using butane as the sole base material for gas manufacture increased from one at the end of the year 1928 to seven at the end of 1929 to 40 served with fuel in 1930. During 1930 several other companies became interested in butane-air process plants, the Standard Oil Co. of California and the Skelly Oil Co. being especially active.

From the information available, it is estimated that the total number of butane plants in operation at the present time is about 60. It is also estimated that 50 more plants are being constructed or are under contract for construction. This means that the industry is already assured of a total of 110 butane-air plants.

It is estimated that the total number of purchasers of all forms of liquefied petroleum gases in tank car quantities increased from about 60 at the end of 1929 to approximately 90 at the end of 1930. It is known definitely that the products have been purchased in

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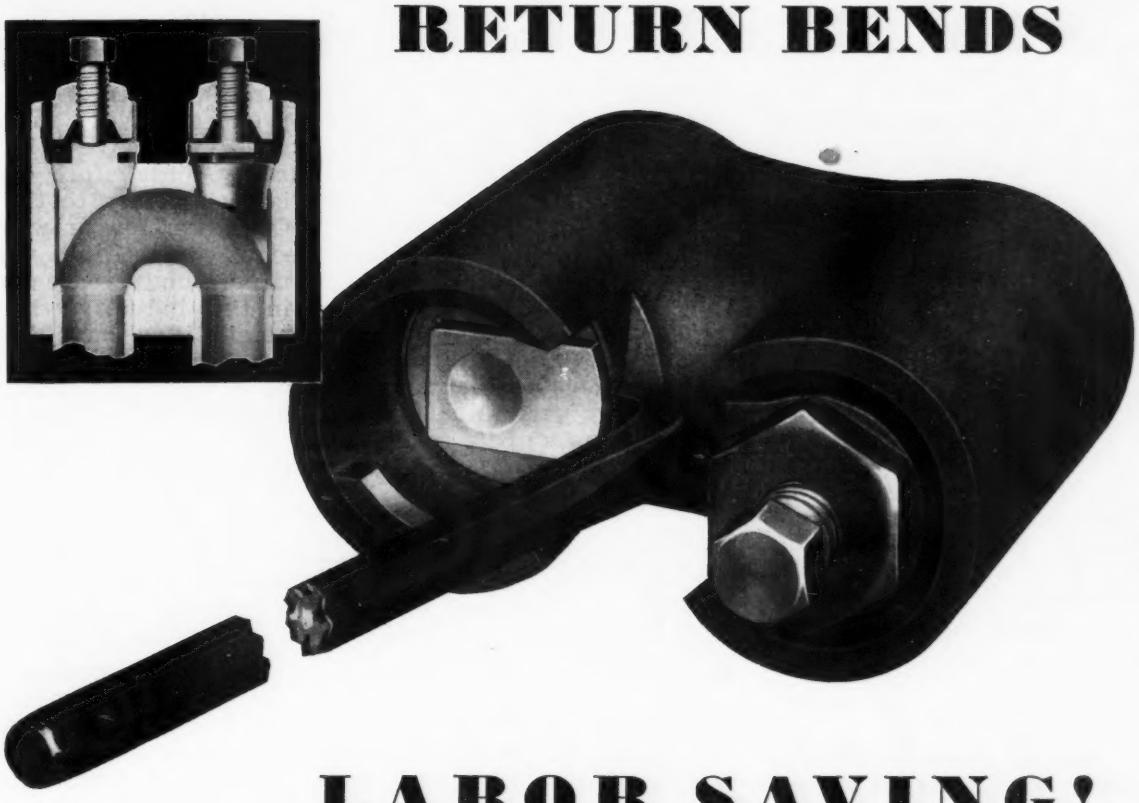

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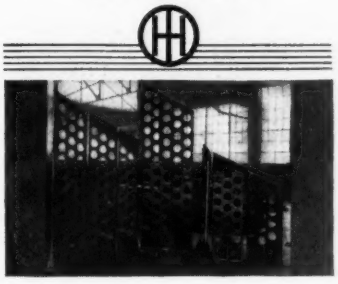

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wholesale tank-car quantities in at least 34 States and Canada, representing 105 points to which the commodities were shipped, most of which are in the territory lying east of the Mississippi river.

Prior to the year 1930 there was no authentic statistical information on the marketed production of liquefied petroleum gases. A recent publication[1] gives the data in Table 2 pertaining to the sale of these gases.

Table 2

Marketed Production of Liquefied Petroleum Gases, 1922-1930

Year	Gallons
1922	222,641
1923	276,863
1924	376,488
1925	403,674
1926	465,085
1927	1,091,005
1928	4,522,899
1929	9,930,964
1930	18,017,347

The growth of the liquefied petroleum gas industry is depicted graphically in Fig. 1, in which there is also shown the comparative increase in business during recent years of several other young industries. In this comparison the volume of business for the year 1926 was taken as 100 per cent. Fig. 1 clearly reveals that exceptionally rapid progress has been made in the sale of liquefied petroleum gases in the last few years, whereas the growth of the industry prior to that time had been more or less normal as compared with the other industries.

Financial Operating & Economic Status

The growth of the liquefied petroleum gas industry affords remarkable opportunities for increased markets for the product of many manufacturers. Among these products may be classed storage tanks, tank cars, cylinders, regulators, pipe, fittings, gas ranges, hot water heaters, buildings, automobiles, tools, burners, laboratory apparatus, control instruments and many other articles too numerous to mention. If fact, a very large percentage of the apparatus and equipment used in the petroleum and gas industries are, of course, used in the production, transportation, and utilization of liquefied petroleum gases.

It is, therefore, obvious that industry in general is vitally concerned in the growth of this infant but lusty industry. Statistics are not as yet available regarding many of the financial, operating, and economical aspects of the business. The following tabulation (Table 3) represents for the greater part estimates based partly upon information obtained from marketers and distributors of liquefied gases and partly upon the experience and contacts of the Philfuels Company. Since the industry has now gained official recognition and is being carefully surveyed by Governmental agencies, it is to be expected that definite and authentic statistics will be available in the near future pertaining to these various phases of its activities.

Problems of the Industry

From what has been said regarding the market possibilities for liquefied petroleum gas, you may all think that large and easy profits await the taking. Such is not the case. The liquefied petroleum gas industry is highly competitive both within and outside its own ranks.

Competition among liquefied petroleum gas marketing companies is confined mainly to the wholesale markets. Wholesale markets have always been and probably will remain to be the most fertile field for price cutting competition. The presence of any aggressive merchandiser in either wholesale or retail activities tempts others. The wholesale markets are the most vulnerable.

The magnitude of the present sale of liquefied petroleum gases is not great enough to even partially satisfy one real large marketer. The marketed production of the liquefied gases will have to be increased many fold before consumption is satisfactory to the industry. Of course, low prices and intensive competition will in the meantime increase consumption in this industry whose market possibilities have been barely touched, but there is a limit beyond which the trend of a market can not be forced.

It would be more logical and to the best interest of consumer and producer alike, to develop the wholesale markets in a more cooperative way and thereby avoid many unnecessary expenses and unjustifiable duplications of effort.

A good indication of some of the competitive situations which at present exist in the wholesale markets is evidenced by the fact that an analysis of wholesale accounts which our company has lost to competitors shows that at least 50 per cent

Table 3

Financial and Operating Estimates Liquefied Petroleum Gas Industry—1930

Item	Bottled Gas A	Gas Mfg. B	Industrial Gas C	Total D
1. Investment, End of year, dollars	17,000,000	3,225,000	2,250,000	22,475,000
2. No. Retail Customers, End of year	117,000	15,000	.....	132,000
3. Retail Fuel Sales During Year, dollars	4,500,000	350,000(a)	.....	4,850,000
4. Appliance Sales to date, dol.	12,000,000	1,500,000	.....	13,500,000
5. No. of Persons Employed At Present	3,000	(b)	(b)	3,500

Item 1—This does not include any investment at gasoline plants, such as manufacturing equipment, storage tanks, tank cars, etc., which involve an investment of about $4,500,000. It does include the sales development costs prior to the nonprofitable stage of operation.

Item 2—This represents retail customers only. It does not include tank car purchasers of fuel.

Item 3—This is the gross fuel sales income from retail customers listed in item 2.

Item 4—This represents the gross retail sales income to date from gas burning appliances such as ranges, hot water heaters, burners, etc.

Item 5—The estimate is based upon the number of full-time employees that would be required in the sales and operating activities under headings A, B, and C. A larger number are actually employed, some working part time only.

Item (a) Most of the customers were secured this year, hence the retail fuel sales income would be very low as compared with that obtainable when customer saturation is approached.

Item (b) Gas manufacturing and industrial gas employees estimated to be 500.

(1) Department of Commerce, March 10, 1931.

of these were lost due to price cutting and about 20 per cent to reciprocity tactics. Only 30 per cent were due to outside competition.

It should be obvious to all that such tactics only impoverish the industry, since the inevitable result is fewer customers and a lower income. Marketers entering the field seem to fail to recognize that the main problem is to create new markets in an unsaturated field. In most cases, they follow the old line of competition which has been found necessary or justifiable in those businesses whose markets are practically saturated.

Until the economics of the situation are more fully understood, it is to be expected that the line of least resistance in all industries will be to take full advantage of all the work of the pioneers. Price cutting will, if carried far enough, always secure the wholesale markets. This is a course of action to which all marketers can resort. It is the way of the weakling as far as merchandising ideas are concerned, but only those favored with natural resources or those with strong financial background can continue to exist and in the end the consumer pays for such unsound practices.

It certainly would be to the best interests of all, and this applies to producers of manufactured gas as well as it does to the liquefied petroleum gas manufacturers, if the money lost by price cutting were used for sales engineering purposes to develop new customers instead of donating it to customers who are already sold on the advantages of gas.

Besides being used as domestic and industrial fuel, liquefied petroleum gases can under favorable price conditions, be used as a raw material for the manufacture of carbon black, light oils (benzol, toluol, motor benzol, etc.) and as the raw material for the manufacture of solvents which are widely used in the lacquer industry. The probable demand for liquefied petroleum gas as a raw material for the manufacture of solvents does not seem large enough to have an appreciable effect upon the supply. It is possible to manufacture carbon black from liquefied petroleum gases only when the market price of those gases is very low. However, the manufacture of light oils and carbon black by a combination process, permits the use of liquefied gases at higher market levels.

Investigations have proven that the use of refinery vapors containing high percentages of unsaturated hydrocarbons from cracking processes, gives a higher yield of light oil than do the corresponding paraffins alone. It is, therefore, apparent that the sale of liquefied petroleum gases from refineries must carefully and completely valuate the greater potential worth of the raw material as well as the manufacturing cost and various economics which, in turn, are also tremendously effected by the policies and procedures eventually adopted in connection with the disposal of these gases.

THE writer is convinced that this problem has not been given the consideration which it merits and that some of us have been unduly influenced by the actions of our so-called competitors. Investigations indicate that with only slight improvements in the design of the fuel system of automobiles the permissible vapor pressure of motor fuels can be increased enough to enable the refiner to use in his finished motor fuel practically all of the potential supply of butane available in the refinery gases.

Moreover, butane, or the light oil which can be manufactured from it, contributes materially to the volatility and the anti-knock value of the finished gasoline and, therefore, imparts to the gasoline certain properties which will increase its market value. It would, therefore, appear that the supply of butane available for liquefied petroleum gas outlets will be dictated to a great extent by the demand for motor fuel as long as the price of gasoline is not exceeded and satisfactory performance is not sacrificed.

Gasoline is the dominant product of petroleum and it is only to be expected that the motor fuel markets will continue to be more attractive as far as prices are concerned, than the low form value fuel oil markets.

Butane, as an industrial fuel, encounters competition with natural gas, manufactured gas, and fuels of low form value such as fuel oil, coal, coke, etc. In practically all cases the liquefied petroleum gas products can be sold at a profit at a lower price per therm than manufactured gas. Butane under sufficient economic pressure will, of necessity, find a market outlet at a sufficiently low price level. The lower the price level the more rapidly will this economic pressure cause the commodity to flow to the markets which are awaiting its use.

In competition with city gas for the industrial markets butane has the advantages of low investment and production costs and is not limited to sales in any given territory because the sales activities are not confined by a fixed base of operations. Consequently, butane commands an exceptionally flexible and strategic position.

The liquefied petroleum gas industry has made very little attempt to compete with city gas for industrial markets, but has confined its efforts primarily in attempting to co-operate for their economic development. Until the gas companies give due consideration to the form value of butane as they do their own products, just that long will they view butane as a raw material competitive with gas oil instead of a finished commodity competitive with their own products.

In the meantime, the loss of revenue to the gas companies due to competitive price conditions exceeds many times the gross revenue available from the sale of butane. Little hope exists for the utmost in the way of co-operation between the gas companies and the liquefied petroleum gas industry in developing industrial markets until all these facts have been made self-evident through the sheer force of economic pressure.

Except for a few local situations the competition in the domestic gas retail market is not of serious importance at present. The number of potential customers is large and conditions do not lend themselves readily to flagrant practices. This is undoubtedly due to the fact that it is almost as costly

and as difficult to secure business from the customer of a competitor as it is to create a new customer.

Price cutting in the domestic gas retail trade is confined primarily to those companies who have had little experience in the business. The secondary reaction of such companies, which is forced upon them by the balance sheet, is to restore price and devote their efforts to more sound economic practices. As time goes on and markets are more fully developed this situation will undoubtedly change and competition will become more intense.

In the bottled gas industry many economies could be effected and the industry rapidly developed by co-operative and unified efforts in nation-wide merchandising in which due consideration was given to patents, finance, source of fuel, distribution, transportation and merchandising facilities.

Competition, which in most cases the bottled gas trade is unable to meet, is encountered where other gases are distributed through pipelines. Fortunately for the bottled gas business, it is not economical to lay gas mains save in densely populated areas. This condition leaves a large number of customers available for bottled gas in the suburban and rural districts. As a matter of fact, some of the most profitable bottled gas districts are in territories covered by many gas lines.

Electricity promises to be the chief rival of propane for the rural and suburban markets. For this reason much could be gained by full co-operation between the city gas companies and the bottled gas companies because bottled gas makes it possible for the gas companies to more intelligently plan their gas main extensions and to more economically develop their outlying markets.

Economic conditions seem to be decidedly on the side of the gaseous product. However, the problem is mainly one of merchandising and it, therefore, behooves the industry to be on the alert because the electrical industry is noted for the remarkable way in which it has aggressively marketed its products.

New Refining Patents

Preventing Evaporation. U. S. P. 1 796 010, March 10, 1931, application filed July 2, 1927; John F. Eakins, assignor to Standard Oil Co. of Indiana.

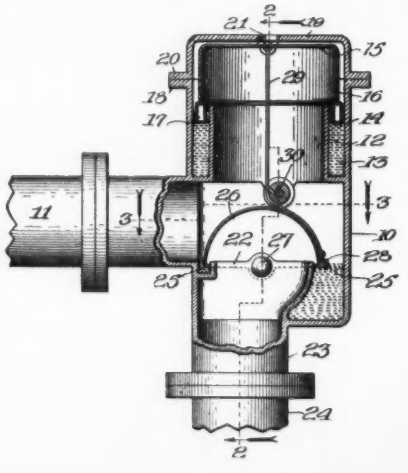
IN A NEW device for preventing loss by evaporation of volatile (gasoline) fractions from oil storage tanks, a conduit 11 from the vapor space of the storage system leads into a chamber 10 having a vertical outlet 12 surrounded by a liquid seal channel 13 held within walls 14. An inverted cup 15 has a depending skirt 16 extending into the sealing liquid in 13, and buoyed up by the air chamber or float 17. The walls 14 end in flange 18, co-operating with flange 20 on the cover 19, which is perforated (as shown at 21) so that the upper side of the cup 16 is subjected to atmospheric pressure.

The chamber 10 can be supplied with gas or vapor from a pressure line 24 through conduit 23 and mouth 22, which is surrounded by the liquid seal channel 25 and has a cylindrical valve 26, at 27, dipping into the liquid seal when the valve is closed. The valve 26 is held open by the weight 28 and is attached to a cord 29 from the underside of cup 15. The cord is guided by grooved wheel 30.

This improved apparatus is operated by a slight predetermined pressure differential; for example, when the pressure in the vapor space falls below the prescribed limit, atmospheric pressure on the upper side of the cup 15 co-operates with the weight 28 to overcome the buoyancy of the float 17, so that valve 26 opens and gas or vapor passes from the pressure line 24 into chamber 10 and thence into the tanks, so that excessive vacuum cannot form. When the pressure in the tanks rises above the prescribed limit, valve 26 is closed again.

What is Claimed

A valve structure having a conduit leading into a chamber, an outlet from the chamber, vertical liquid-seal walls around the outlet, an inverted cup over the outlet having a skirt depending into the liquid seal, means to buoy up the cup until a predetermined pressure is exceeded, a second outlet from the chamber, a valve controlling this outlet and connected to the inverted cup so as to be operated by movement of the inverted cup.



* * *

Anti-Knock Gasoline. U. S. P. 1 799 218, April 7, 1931, application filed July 30, 1927; Carbon P. Dubbs, assignor to Universal Oil Products Co.

IN AN improved application of the counter-current principle to a pressure cracking process, a gasoline with high anti-knock value is directly produced from any of a wide variety of charging stocks. The oil is preheated in a succession of progressively hotter zones on its way to the cracking coil; and the vapors from this coil are used to preheat the incoming oil by passage from zone to zone, becoming progressively cooler and being subjected to highly efficient scrubbing and fractionation.

By bubbling the released gas and vapor through pools of the liquid oil, the fractionating effect is enhanced and the losses due to formation of fixed gases and coke are minimized. provision is made for separate withdrawal of any of the heavier fractions from the successive zones, so that full advantage may be derived from the highly efficient fractionation.

Flow of the vapors through the system is accelerated by providing pressure gradations from zone to zone, so that the last zone traversed by vapor is under the lowest pressure. In each zone, the vapors are introduced below the liquid level, to promote thorough and intimate contact of vapor and liquid; this gives repeated and prolonged fractionation, so that it is possible to produce a final distillate conforming to commercial gasoline requirements.

What Is Claimed

Cracking oil by passing it to one end of a series of externally unheated zones and successively through the series, successive zones being under progressively higher pressures, taking off unvaporized oil from the last zone and cracking it outside this zone, removing the heavier constituents and passing the remaining hot cracked products to the zone from which unvaporized oil is taken off, causing the vapors to pass through the series of zones counter-current to the flow of oil, effecting commingling of vapor

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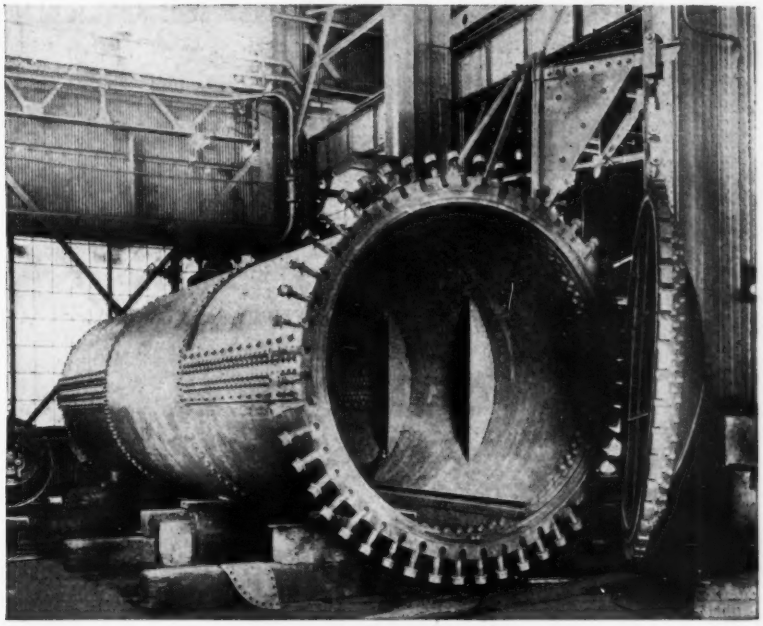
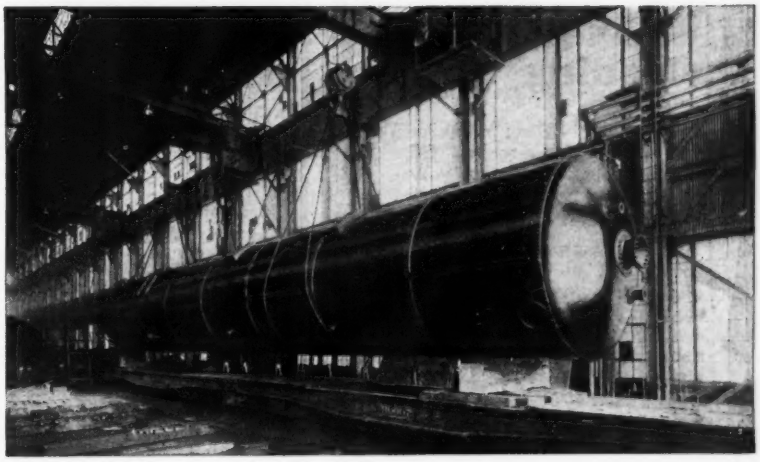


IMPREGNATOR SHELL



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and oil in the series of zones and removing from the zone to which fresh oil is fed those vapors still remaining uncondensed, and condensing these vapors as the final product of the process.

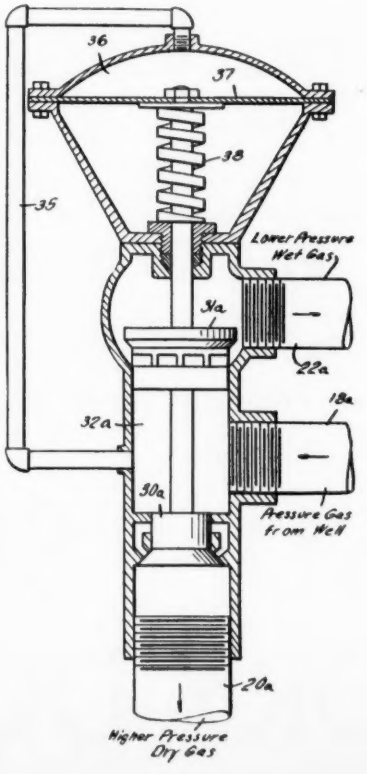
* * *

Recovering Pressure Gas. U. S. P. 1 798 774, March 31, 1931, application filed June 19, 1930; Louis N. Yates, assignor to Sinclair Oil & Gas Co.

IN THE use of automatic gas-lift apparatus for increasing the flow of wells, it has been found that when the high pressure gas is released and returns from the well, the first portion is practically "dry," or free from oil vapors, whereas the later portions, as their pressure decreases, contain vapors which can be profitably recovered for use in gasoline.

In order to derive the greatest possible advantage from this observation, an automatic by-pass valve has been designed to permit separate recovery of the gas portions above and below a predetermined pressure. Thus the gasoline in the later portions of the released gas can be recovered without the necessity of handling in the recovery system the total amount of recovered pressure gas, most of which carries no gasoline vapors.

In one embodiment of the invention, the by-pass valve is of the diaphragm type, as shown in the drawing. The chamber 32a is connected through by-pass line 35 with a diaphragm chamber 36 having a diaphragm 37 connected to the spring 38. At low pressures the spring holds valve 30a closed and 31a open, permitting gas from line 18 to escape through line 22a. When the pressure exceeds the predetermined limit, it acts through pipe 35a on the



diaphragm, closing valve 31a and opening 30a, thus passing the gas into line 20a. The operating pressure is adjusted according to the pressure at which it becomes desirable to begin to recover gasoline from the gas.

What is Claimed

Recovering pressure gases from automatic pumping of oil wells, by automatically separating the higher pressure dry gas from the lower pressure wet gas recovered from the well, whereby the dry gas can be kept free from oil vapors, and the gas containing oil vapors can be kept relatively free from admixture with dry gas.

New Patents

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

May 12, 1931

REFINING

Process of treating petroleum—Troy M. Andrews and Carl E. Lauer, Port Arthur, Tex., assignors to Texas Co., New York, N. Y. Filed June 6, 1925. No. 1,804,451.

Apparatus for fractionation of hydrocarbons—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Jan. 14, 1926. No. 1,804,553.

Method and apparatus for fractionation of hydrocarbons—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Nov. 12, 1926. No. 1,804,554.

Cracking process—William P. Deppe, Bridgewaters, and Leland L. Summers, New York, N. Y. Filed Feb. 8, 1924. No. 1,804,917.

Treating hydrocarbon oils—Will K. Holmes, Tulsa, Okla., assignor to Texas Co., New York, N. Y. Filed Aug. 13, 1925. No. 1,804,933.

Vacuum distillation—William B. Logan, Port Arthur, Tex., assignor to Texas Co., New York, N. Y. Filed Dec. 27, 1927. No. 1,804,941.

Art of cracking hydrocarbons—George H. Taber, Jr., Rye, N. Y., assignor to Sinclair Refining Co., New York, N. Y. Filed Oct. 11, 1928. No. 1,805,113.

Desulphurizing liquid hydrocarbon—Henry H. Wilson, Regina, Saskatchewan, Canada, assignor to Standard Oil Development Co. Filed Jan. 11, 1928. No. 1,805,444.

PRODUCTION

Line-changing reel—Lawrence D. Barner and Gus O. Shelander, Beaumont, Tex. Filed Oct. 17, 1928. No. 1,804,585.

Sand-testing tool—Frank Hux, Bruni, Tex., assignor to Standard Drilling & Sand Testing Co., Webb County, Tex. Filed July 1, 1929. No. 1,804,620.

Expansible bit—George N. Fitch, Ventura, Calif. Filed May 6, 1930. No. 1,804,681.

Core drilling attachment—George S. Fosnaugh, Compton, and Henry H. Thrasher, Southgate, Calif. Filed Nov. 2, 1929. No. 1,804,682.

Method and apparatus for working oil sands—Charles F. Jackson, Minneapolis, Minn., assignor to Standard Oil Development Co. Filed Sept. 27, 1926. No. 1,804,692.

Jarring tool—William H. Maxwell, Los Angeles, Calif. Filed Apr. 5, 1927. No. 1,804,700.

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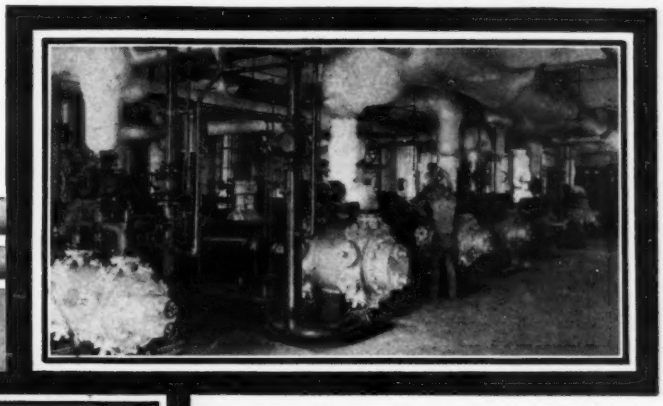
PREMIUM GRADES



ZERO test oils are what the public wants . . . lubricants which flow freely when northern gales send the mercury scurrying for its lair . . . . More and more, oil companies recognize the added profit which comes from the cold processed product . . . . Right here the internationally known engineering department of this organization can be of invaluable service to you. Vilter engineers know the problems of the refinery . . . . As an example, Vilter points to one of several such outstanding installations: The Texas Company's plant at Port Arthur, which is illustrated . . . . Write or wire for data, or send us your blueprints for detailed recommendations and prices . . .

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REFRIGERATION

Bulletins cover the usual phases of refrigeration; also special reports are yours for the asking.

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100% DIRT-FREE

IF EVER a product needs to be 100% dirt-free, it is lubricating oil.

The wise refinery official will see that every step is taken to assure his company's oils being shipped 100% dirt-free.

A Sweetland Filter at the loading station will do the trick.

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PARIS, T. L. Genter, Concessionaire, 63 Ave. des Champs Elysees

Gasoline demand is going up, not down

In the next six months American motorists will buy 980,000 barrels more gasoline than the refiners made in the same period last year

But it must be the right kind of gasoline

This, according to estimates by the American Petroleum Institute committee appointed to appraise supply and demand

The motorist tells what kind of gasoline he wants No mistake about it

"Demand," to quote the com-

ADVERTISING PAGES REMOVED

Growth of Foreign Refining Facilities To Cut In on American Exports

By James Broadbent

THE other fellow's grass is always greener but in climbing the fences there is always a great deal of confusion and upset conditions. This is particularly true of our industry at the present time. Governments, companies and individuals are all whooping it up: "Get out of the way, let me in first and the devil take the hindmost."

The fabled industry oil; the vision of riches calls the idler who desires something for nothing; it calls the worker who looks for reward for labor well spent; it calls the government that looks for future resources and it calls the leader of men and money. To all and sundry it hands out its rewards almost it would appear without any discrimination.

The writer has travelled extensively through Europe and North America and also spent a year in Argentina, not a day here and there, but months at a time among the oil men of these different countries. His name is familiar to many executives but more so to many many refinery workers.

This article is an honest endeavor to present the situation to the industry from an international point of view rather than a national one.

Your UTOPIA is only a dream, a chimera; it has come and gone and we are facing the greatest battle that the industry was ever in.

One hundred million barrels of oil imported into the United States; one boatload of gasoline from Russia. An item in the papers about it and yet millions more where the first came from. Men in Washington fighting for a tariff and men fighting against it. Distress throughout the oil industry's workers and natural resentment against the importation of oil while so many are idle. Proration in the oil fields and no proration on crude imports. Is it any wonder that the oilman is disgusted when he reads in the press the above information and also the squabbles about oil in Washington.

A WORLD-WIDE picture of the growth of petroleum refining, and views as to the effect of the growth of the refining industry abroad upon refining activities in this country, and upon the relation of a tariff on oil and its products coming into this country, are contained in the accompanying article by Mr. Broadbent, who refers to himself as a "refinery worker at different spots around the world."

The independent producer fights for protection and we are led to believe from the press that the "Tycoons" of the business fight against it. The observant oilman is liable to toss his hands in the air and wonder "what is it all about?"

Get out your atlas, not of the U. S. A. and Canada but of the world; no longer are you bounded by Mexico, Canada, Atlantic and Pacific. No longer can your ships sail from the coasts of your oil country and unload their cargoes at the four quarters of the earth until they have fought tooth and toe nail for that business.

You are international, whether you want to be or not, economic conditions have driven you out of your insularity.

It is true that the major oil producing and refining country for the past 70 years has been America and as a result the world beat a path to our doors in order to purchase our products. The result was that we naturally fell into an insular or national train of thought. I except the large exporting and importing companies from this category. I again stress the point that the oilman must from now on keep in touch with international affairs, because they will vitally affect the industry as a whole.

The "Machine Age" has developed very much more rapidly here than elsewhere, consequently the expansion of our industry one might say has been due to national expansion with a gradually increasing surplus going abroad. However the "Machine Age" is coming on apace in foreign countries so much so that foreign legislators are crying "Scat" to the American oilman; we will have our own oil and oil refineries.

The result is that construction work is in progress on refineries in Sweden, France, and Spain. A small refinery has just been commissioned in the Canary Islands. New refineries are operating in Italy, England and Scotland. Old established plants are in operation in Poland and Rumania.

Russia upon the completion of her five-year program will be one of the most up-to-date refining countries in the world and also has unlimited production.

Can you visualize this, Mr. Oilman? Do you see on your map the strategic location of these countries and what it holds for your export market? Let us not at present think of exporting crude, at least not yet.

Let us review the Island of Britain that tight little kingdom, Swansea, Southampton and Grangemouth; tidewater refineries working. At the mouth of the Thames river skimming plants working.

Where does the crude oil

come from—why Persia and South America. Refined oils from the U. S. A. and Russia. Two of the world's largest companies have headquarters in London, namely the Shell and the Anglo-Persian—the latter being approximately 49 per cent owned by the British government.

Poland and Rumania can take care of themselves in production and export some.

Italy has a contract with Russia to supply her refineries.

The other countries, naturally, want to be in line for their own protection and benefit and having refineries must make contracts for crude supplies. Do you think they will come to the United States? That is a question of economy and here is an actual proposition which might do away with coming to the United States.

Look on your map and there on the coast of Palestine, it is proposed to build a refinery and crude loading station, to be supplied by a pipeline running over the Syrian desert from Iraq or Mesopotamia. They do not have to prospect for oil; it is there in proven acreage drilled and ready to come out; also bear in mind that over there a 20,000-barrel well is small stuff.

This proposition is backed by capital from America, France and Great Britain. It will eliminate the long haul of crude to Europe from Persia via the Suez Canal. When this happens the crude becomes cheaper or at least the transportation cost is cheapened and someone reaps the benefit.

Pass up north on your atlas, there is Batum on the Black Sea receiving oil by pipeline from Baku on the Caspian Sea. Loading the tankers they pass over the Black Sea, the Bosphorus through the Sea of Marmora and smilingly bow to the Mediterranean Sea and all countries bordering on it.

MR. OILMAN having looked at your atlas I do not think you will have to worry about exporting crude to your European brethren. About the only thing I see that would upset this would be some great economic upheaval.

However, I do not want to be too pessimistic, the use of oil is on the up and up and we as the premier oil men of the world will get our share of it; our salesmen will find it a little harder than before and it just means a wee bit of an extra push.

South America with its known and unknown resources will in the writer's opinion play a large part in European crude market competition, in fact much more so than North America. At present it is doing quite a business over there and also with North America.

There are refineries in Cuba, Mexico, Venezuela, Dutch West Indies, Peru and Argentina. Production exists in Mexico, Venezuela, Colombia, Peru and Argentina.

QUITE a great deal of oil floats over the old Spanish Main, drifts up to the States and down to the various republics of South America. At present most of the consumption of refined oil takes place in and around the great seaboard cities, the hinterlands being sparsely settled or devoted entirely to great ranching operations.

Going south on the eastern seaboard there is no production from the Caribbean Countries until one arrives in Argentina. Argentina boasts of production and refining although at present the consumption is greater than the production, hence it is a market for refined products and a small quantity of crude is carried from Peru around Cape Horn.

Refineries are located at Commodoro Rivadavia, Bahia Blanca, La Plata, Campana and the writer understands that a small refinery is being erected on the outskirts of Buenos Aires. Continuous search is being made for crude and it is not unthinkable that in the near future they will be able to take care of themselves. The Argentine government is very nationalistic and this condition will arise if the government has its way.

Peru boasts of production and refining and looks after a great deal of business on the West Coast, it also ships a great deal of its crude to the Imperial in Canada.

Travelling to the Far East we find that there is production and refining in Burma, Java, Borneo and Japan. Using Singapore as a center of a circle one might illustrate the Far East trade by stating that on the rim we have the East Coast of Africa, Australia, New Zealand, the Fiji Archipelago, Philippine Islands, Japan, China, India, Arabia and Persia. Truly a royal battleground for business with refineries scattered here and there in very strategic places.

Located on the Persian Gulf is a refinery capable of refining over 100,000 barrels of oil per day and has the crude production to do so, within a couple of hundred miles of the refinery and hooked up with pipelines.

Japan is forging ahead with the construction of new plants in addition to the ones already in service. California plays a potent part in this great "Far Eastern Trade War."

Mr. Oilman if you have used your atlas do you not begin to realize that you must of necessity become "Internationally Minded."

In spite of troubled economic conditions the consumption of oil products will increase and we must have our share of the trade.

WHETHER we agree with the so-called "Tycoons" of the oil business on tariff or proration or whether we disagree with them, we must at least admire and appreciate the breadth of vision, that international forethought of these same "Tycoons" who have thrown their men around the world to get and maintain as much of the world business as can be had for the American oil industry.

In closing I would state that it is my sincere belief that in enacting legislation in Washington around the oil industry, our representatives should consider carefully that in opening one door they do not close another in their faces. It likewise behooves the American oilman to get in line with a knowledge of the part his industry plays in the world if we are going to continue to play the leading part as before.

NEW EQUIPMENT

The Brown Instrument Co., Philadelphia, has off the press two bulletins on how to save steam and how to prevent combustion losses in refineries with its equipment.

A well-illustrated bulletin on the Brown electric flow meter which shows just how many pounds of steam, barrels of oil, cubic feet of air or gas or gallons of water, were delivered during any part of the day or night, from the plant or pipeline, contains a chart record of these volume units which is made automatically and accurately. Added features of this flow meter are the inductance bridge principle, easy range-changing, responsiveness to small flow changes and accuracy under small pressure differentials.

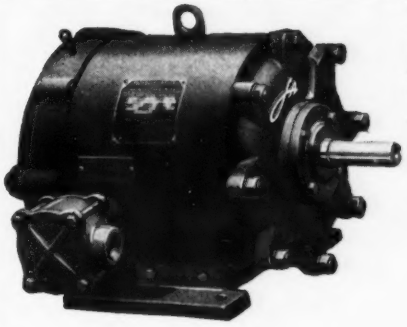
Its electric Co_2 meters, the company says, provides an adequate means of continuously and accurately measuring the CO_2 content and temperature of furnace flue gases enabling the fireman to tell whether or not he is firing his furnace in a proper manner to maintain maximum fuel economy. The complete burning of all the carbon in the fuel being the first essential toward furnace-firing efficiency and a provision for sufficient air to effect complete combustion, the carbon will be burned completely to carbon dioxide, generating 14,600 B.t.u. per pound of carbon consumed, the company points out.

* * *

Merco Nordstrom Valve Co., 343 Sansome St., San Francisco, has moved its Boston, Mass., office to 250 Stuart St. The new offices are larger to accommodate increased personnel and to provide more display space for products.

* * *

General Motors Corp., Broadway at 57th St., New York, has appointed Paul Willard Garrett as director of public relations, with headquarters at New York, according to Alfred P. Sloan, Jr., president. Mr. Garrett for the past six years was financial editor of the New York Evening Post.



The *First* "Explosion-Proof" Fan-Cooled Motor

Type E Originated in 1927 by The Louis Allis Co.

The *First* "Explosion-Proof" Air-Break Starter

Type E Originated in 1930 by The Louis Allis Co.

Companion Pioneers!

- Developed by Louis Allis engineers, these *companion pioneers* have brought safe individual motor drive to many hazardous industries. They have eliminated the need of fire walls, and the hazard and inconvenience associated with oil-immersed switches.
- Tested and approved by Underwriters' Laboratories for Class I. Group D hazardous locations, these companion pioneers are inexpensive, simple, safe and easy to install wherever gasoline, naphtha, alcohol, benzol, and equally hazardous liquids are made, used, or handled . . . widely used in gasoline bulk stations, terminals, refineries, natural gasoline plants, pipe line pumping stations, dry cleaning and chemical plants.

Write for complete information.

WARNING: Do not confuse Louis Allis "Explosion-Proof" motors and starters with non-approved so-called "vapor-proof" apparatus. Real "Explosion-Proof" motors and starters must pass severe explosion tests to be approved by Underwriters' Laboratories for use in Class I. explosive atmospheres.

LOUIS ALLIS

"EXPLOSION-PROOF" Electric MOTORS

THE LOUIS ALLIS COMPANY
MILWAUKEE, WIS.

Sales Offices: Tulsa, Houston, Shreveport, St. Louis, Chicago, Detroit, Cleveland, Pittsburgh, New York, Philadelphia, Boston, Buffalo, Los Angeles, San Francisco . . . and other principal cities.

Carbondale Refrigeration for Refiners

CARMACO

Send for a Copy of our Wax Plant Bulletin

Design of Complete Wax Plants—Absorption and Compression Refrigerating Machines—Wax Distillate Chilling Machines—High Pressure Filter Presses—Paraffine Wax Sweaters—Heat Exchangers and other Refinery Equipment.

CARBONDALE MACHINE COMPANY, CARBONDALE, PA.

SALES OFFICES

New York Los Angeles Buffalo Chicago Pittsburgh Tulsa Kansas City Philadelphia Boston

1934's Scrap Pile will

ON GREASE KITS, TOO!

The Sentinel is just as practical on grease kits as it is on grease drums. The same unit can be used interchangeably. You need not buy special drums or kits. For the Sentinel is built to fit all standard equipment.

THE SENTINEL MEASURING GREASE PUMP

Sentinel Grease Pumps add substantially to the appearance value of the service station. And once your customers learn of the protection it affords them you will find the Sentinel building invaluable good-will. The illustration shows the Sentinel pump on the standard 100 pound grease drum. There is no muss or fuss involved in moving the Sentinel from one drum to another. The change is made just as easily as with the old type, non-measuring pump.

UNIVERSAL'S

be a Stranger to *The Sentinel*

OBSOLESCENCE is hot on the trail of grease units these days!

A code that requires metering devices today and promises to insist upon still further advances tomorrow. The swift upturn in service standards fostered by competition and the increasing demands of the motorist.

These two forces mark old-style, non-metering equipment for quick obsolescence; mark make-shift, stroke counting adaptations for an early trip to the scrap pile.

Speedy obsolescence holds no threat over Universal's Sentinel. 1934's scrap pile will be a stranger to this modern metered and measuring grease pump.

For the Sentinel was designed and built as a metered and measuring pump from the ground up. Into it went more than a year of engineering research and development work.

Applying the hydraulic ram principle, Universal Engineers have produced a unit that measures grease with positive accuracy under all conditions; that registers the exact amount of grease dispensed (plus counting pump strokes); that clearly signals operator and customer when the grease supply is exhausted.

The Sentinel meets the spirit of the Code as well as the letter; anticipates tomorrow's demands as well as those of today.

Metered grease equipment is here to stay. Even without a Code this modern development could not have been denied. What happened with gasoline pumps is happening today on grease pumps.

Protect your 1931 investment in grease pumps. Make sure that the equipment you buy today has a substantial life expectancy.

Let us show you, by demonstration, why 1934's scrap pile will be a stranger to the Sentinel.

CONSIDER THESE FEATURES

1. Dispenses grease by visible means . . . same as gasoline pumps.
2. Loads measuring chamber under pressure.
3. Absolute Accuracy of Measurement.
4. Exhaustion of Supply Instantly Signaled.
5. Registers exact amount of grease discharged.
6. 100% full measure guaranteed on each stroke.
7. Protects the Station Owner.
8. Protects the Customer.

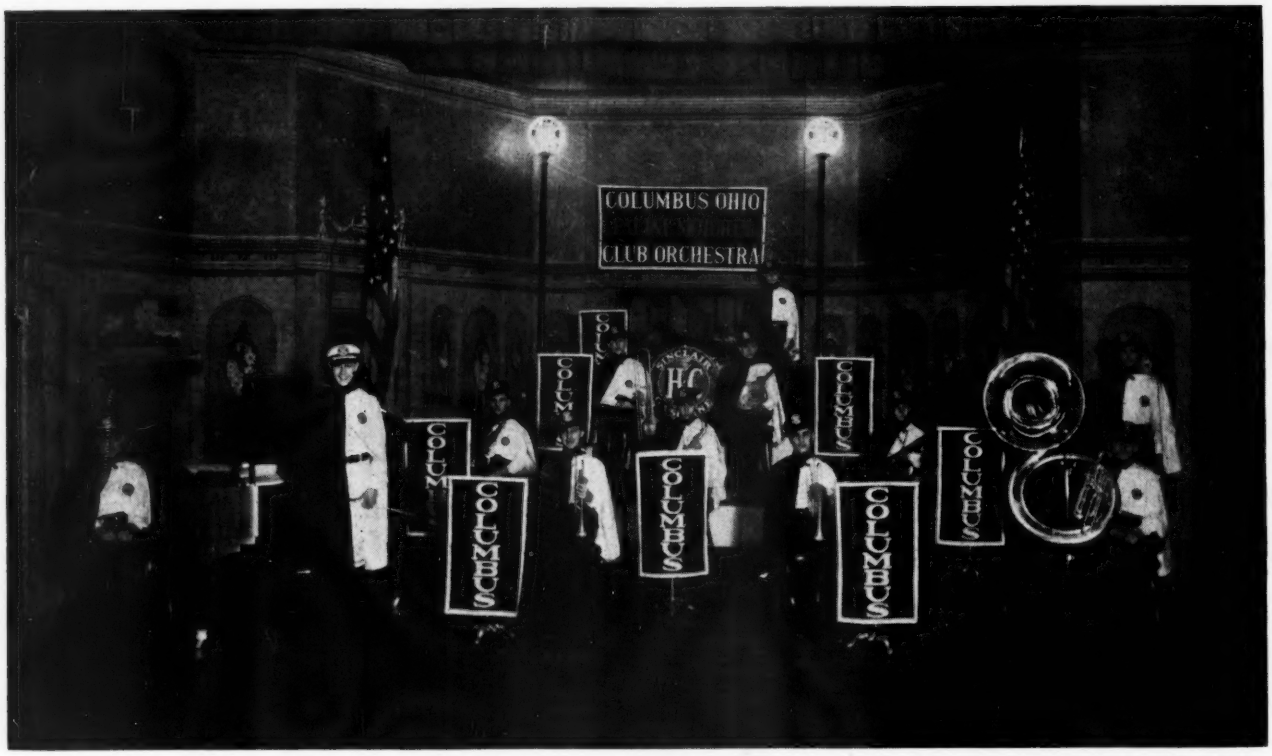
N W UNIVERSAL E EQUIPMENT S

UNIVERSAL PUMP & TANK CORP.
CLEVELAND, OHIO

UNIVERSAL PUMP & TANK CORP.
3860 East 91st Street - - Cleveland, Ohio

SENTINEL *Grease Pump*

Sinclair Station Employes Have Own Orchestra



The Columbus, Ohio, Opaline Motor Oil Club orchestra as it appeared on the stage of a Chicago theatre before a sales meeting of the Sinclair Refining Co. The Orchestra members are employes at Sinclair stations in Columbus, O. In the front row are C. Saunders, piano; Amor Bues, director; C. Pease, trumpet; B. Nardone, trumpet; L. Baden, bass. Second row: R. Pierson, saxophone; H. Guthrie, saxophone; A. Sherwood, saxophone. Third row: L. Knecht, trombone; B. Brooks, banjo; and G. Johnson, drummer, is in the rear

COLUMBUS, Ohio

SERVICE station employes of the Sinclair Refining Co. at Columbus, Ohio, have their own musical organization, the Columbus, O., Opaline Motor Oil Club orchestra.

The orchestra was developed last year when company officials were seeking a method of stimulating interest in service station employes' sales meetings. A survey of the organization of 103 men produced six who had experience playing in orchestras. Each played a different instrument, and these men comprised the nucleus of the present orchestra.

Five other musicians were recruited to bring the orchestra up to 11 pieces. Although these men were needed for the orchestra they were employed solely on their ability to work as station employes, and are not "padding" for the organization.

"This orchestra has done much to create interest in our service station meetings. Attendance always is 100 per cent," said C. A. Stutzman, service station manager at Columbus. "The boys open the meetings with some community songs about our products."

Most of the men in the orchestra are working at the Sinclair greasing palaces in Columbus.

The orchestra came into national prominence in the Sinclair organization at a recent sales meeting in Chicago. About 700 Sinclair employes were in a Chicago theater on Feb. 20, for a two day sales convention, when a trumpeter announced the appearance of the Columbus Opaline Motor Oil Club orchestra as the stage curtain was drawn.

The men were dressed in white uniforms, with colored capes, and the stage was decorated with banners, and gasoline pump globes.

The music was dedicated to officials of the company with appropriate pieces for E. W. Sinclair, president; J. Fletcher Farrell, vice-president and treasurer; Sheldon Clark and J. W. Carnes, vice-presidents; and A. H. Sus, district manager at Chicago.

Petroleum Marketers Equipment Corp. is the new name of the former Shotwell Co. Headquarters are at 1125 E. 22nd St., Indianapolis. The Shotwell Co. manufactured gasoline pumps and small tanks. The present corporation is continuing the manufacture of pumps and also is jobbing valves and fittings, tanks, auto lifts, compressors, gasoline hose, flood lamps and other service station and bulk plant equipment.

* * *

Gasoline Equipment Co., 702 S. West St., Indianapolis, has just issued a new catalog of complete service station and bulk station equipment. The company handles equipment and supplies of widely known manufacturers. The line includes everything from wiping rags for service stations to complete bulk plants. Some of the equipment is marketed under the company's own brand name, Geco.

Jobbers Meet Co-op Competition With Cash and Carry Plan

By Allen S. James

N. P. N. STAFF WRITER

WICHITA, Kan. OIL companies operating in Kansas are confronted with a new type of marketing. It is a combination of the "cash and carry" and the "cost plus" plans. It is used in sales to tank wagon customers, and is known locally as the "dockage" plan.

There are several variations but generally the customer comes to the bulk plant, bringing his own containers, gets his gasoline, kerosine or distillate and pays cash for it.

The cost plus idea comes in when the jobber agrees to sell the commodity at a certain fixed amount per gallon above the actual cost of the commodity in the jobber's tanks.

The idea originated around Wichita—hot bed of price wars—and has spread to eight or 10 other communities. It has been adopted to meet competition, by many of the Independent oil jobbers in those communities.

A bulk plant operator in Wichita, who had no retail stations, is said to have originated the plan. With a posted tank wagon price considerably above the prices at which he would sell at his bulk plant, farmers and small filling station operators for 40 to 60 miles around Wichita found it advantageous to drive into that city and buy their requirements.

Co-operative associations also practiced some price cutting or rebating, either because they were losing gallonage to the other price cutters, or because there was so wide a margin between refinery and tank wagon prices that the managers realized they could establish themselves more firmly in the good graces of the members by "saving them more money."

From Wichita the "cash and carry" plan appears to have spread to Riverdale, Medicine Lodge, Ford, Wellington, Corbin, Milan, Mayfield, Caldwell, Elkhart, and Ulysses, and by this time probably to several other communities.

Not all of the jobbers now practicing the plan like it. But they say they must meet the competition. Take for instance, the agreement reproduced herewith. This agreement was made by an oil company which has always stood high in its community.

A co-operative association was formed in this company's territory with a membership fee of $50. The member could buy his gasoline, kerosine and distillate at a small amount above cost. In fact the association was supposed to be a non-profit making organization.

This jobber lost gallonage. He saw former customers of other oil jobbers drive to his territory and buy from the association. He had to do something. He devised the agreement reproduced here.

It will be observed that in this agreement a price of 2.50 cents a gallon above cost is made when the delivery is made in the company's tank wagon. Other companies who have met this competition, sell at a fixed amount above cost "at the dock" but charge regular tank wagon prices when the commodity is delivered in company tank wagons.

ONE oil jobber said recently: "It appears to me that it is not economically sound for a customer to have to pay more for his gasoline when he drives into a station and buys it than when he has it hauled to his door.

"We've been maintaining fleets of tank trucks, and hauling the stuff right out to the farmers, and getting less per gallon, despite the cost of truckage, than we get when the customer buys at our stations."

Some companies sell at these prices only where they must meet the competition. This assertion applies also to some of the co-operative associations. Some of these associations, it should be mentioned in fairness to them, have endeavored to stay right in line with major companies on price schedules, letting their dividends be the savings to their members.

NONE of the larger companies have met the "cash and carry" prices, as far as could be learned at the time this was written. So far no success has been reported with reference to checking the spread of the plan. Many jobbers with whom the writer talked said, strange as it may seem coming from jobbers, that the only corrective method would be for tank car prices to advance at least 2 cents, and for tank wagon and service station prices to remain unchanged.

One jobber who is selling gasoline at 7 cents, without tax, at his bulk plant, arrives at the price in this manner. The gasoline costs 3.75 cents a gallon at the refinery. Freight is 1.25 cents a gallon. The agent gets a commission of 0.50 cent a gallon. This leaves 1.50 cents a gallon to the jobber to cover handling, administrative and other overhead expenses and profit.

Usually no tax is collected. This has been made possible by a recent change in the Kansas gasoline tax law. The farmer is required no longer to pay a tax on gasoline or other motor fuel that is not to be used on the public highways. He merely signs a blank stating the pur-

AGREEMENT

THIS AGREEMENT, Made and entered into this.....
.....by and between ....., a co-partnership composed of .....
.....,Kansas, of the first part and ..... of the second part:

WITNESSETH, That for and in consideration of the sum of Twenty Five Dollars ($25.00) cash in hand paid by the party of the second part, and receipt whereof is hereby acknowledged, the party of the first part agree to furnish second party's requirements of Gasoline, Kerosine, Distillate and Lubricating Oils until January 1st, 1932 on the following schedule, to wit:

Gasoline, in lots of 250 gals, or more and Kerosine, in lots of 250 gal, or more 1c per gal. over cost in our storage tanks, delivered in second party's tanks, at our bulk station, and 2½c per gal. over cost delivered in second party's tanks on the farm in lots of 350 gallons.

Lubricating oils, $1.00 over cost to us, per bbl. in lots of 1 bbl. or more, delivered at our bulk station, and at $2.00 per bbl. over cost to us delivered on the farm with an order for fuel.

Distillate, in lots of 250 gal. or more, ½c per gal. over cost in our storage tanks, delivered in second party's tanks at our bulk station, and 2c per gal. over cost, delivered in second party's tank on the farm.

Grease, in lots of 100 lbs, or more at 2c per lb. over cost to us delivered either at the bulk station or on the farm.

Provided, that in order to entitle second party to the privileges above listed he shall pay cash for all such requirements, at the time of each separate delivery.

IN WITNESS WHEREOF, The parties hereto have hereunto set their hands the day and year first above written.

.....

.....

.....

A Kansas jobber's agreement form used in combating co-operative marketing concerns

pose for which it is to be used. This statement frees him of the task of filing a claim for a refund of the tax and getting the refund at some later date.

The seller signs a statement to the effect he believes the buyer is going to use the commodity for the stated purpose. The statement is sent to the state oil inspector.

An oil jobber in Kansas was asked recently by the writer if there was a farmer in his territory who would ever use the gasoline he bought for anything other than operation of engines on the farm.

"Well, sir," the jobber said. "There is one farmer out here at the edge of town, who keeps two drums of gasoline, one for his farm, and one for his cars he uses on the roads. He pays the tax when one is filled, and signs the slip for the other. But, he's the only man I know around here who does that."

NEW EQUIPMENT

Two Small Trucks by Studebaker

MORE power at less cost, the Studebaker Corp. South Bend, Ind., claims for its recently developed 1½-ton and 2-ton trucks, both equipped with 70 h.p., six-cylinder engines.

The 1½-ton truck with 130-inch wheelbase sells at $695 at the factory, and the 160-inch chassis at $775. The 2-ton truck, with 148-inch chassis is $895.

The frames on the 1½-ton are ruggedly braced to prevent weaving. Springs are forged from silico-manganese steel and rear springs are carried on outrigger hangers of heavy duty design, riveted to the frame. Heavy duty four-speed transmission and oversize axles designed for hard service are other features. Dual rear wheels and auxiliary springs are available at extra cost.

* * *

The Howell Electric Motors Co., Howell, Mich. has developed a new motor for use in gasoline vapor and air mixture or lacquer solvent and air mixture.

This motor is built in either polyphase or single phase design with a totally enclosed frame or a totally enclosed fan-cooled frame.

The polyphase motors are of squirrel cage construction with extra heavy casting, bolts and parts. All machined parts have large fitting surfaces to correspond with the Underwriters' Laboratory requirements for this class of service.

The single phase motors are of squirrel cage construction similar to the polyphase motors. These motors are of the condenser starting type, each motor having a condenser starting unit placed in a separate box which must be mounted outside the hazardous area.

* * *

Pittsburgh Equitable Meter Co., Pittsburgh, has published two catalogs describing the Pittsburgh piston-type gasoline meter and the Pittsburgh grease meter for use at service stations. Illustrations and full descriptions are included.

ADVERTISING PAGES REMOVED

Type of wall instrument board used by The Texas Co. in a St. Louis station

Specialized Lubrication Requires Variety of Oils and Greases

By Roger B. Stafford

N. P. N. STAFF WRITER

TODAY'S automobiles require a variety of lubricants. Some cars require eight or more different oils and greases if the bearings and working parts are to give satisfactory service without excessive wear. Even cars with automatic chassis lubricating systems require six and seven different lubricants for the 17 or more points not reached by the automatic system.

The oil marketer or lubritorium operator who uses the proper lubricant for each lubrication point and saves his customers expensive repair work, has a wonderful merchandising opportunity in his hand. He would do well to advertise vigorously the fact that he is equipped to lubricate cars so they will give the best service at low upkeep cost.

The days of general use of cup grease about an automobile are past. Cup grease has only a few applications in the modern motor vehicle. The day of special lubricants is here.

Many stations are taking advantage of the special lubricants in their merchandising activities. They are displaying the special oil and grease guns on wall boards at their stations together with glass jars or bottles of the lubricants used. Samples and guns with which the oils and greases are applied, are labelled so the car owner will know what lubricant is being used, and where. Most car owners are deeply impressed with the display and the service which their cars are given.

It is essential that to lubricate a car properly the oil marketer should follow the recommendations of car manufacturers and of automotive and lubrication engineers. They have studied the needs of each lubrication point, usually in road and track tests as well as laboratory tests.

Here are some general facts that should govern the use of lubricants for particular jobs.

Spring bolts and shackles—Only one automobile manufacturer is recommending cup grease for late model cars. This is Buick which recommends soft cup grease for Buick models and medium cup grease for Marquette. Other manufacturers recommend oil or grease where springs are not set in rubber.

Special one-shot system oils must be used in the centralized lubrication systems. Cars requiring these special oils for centralized systems include Auburn, Nash, Stutz, Packard, Graham Custom 8, and Cord. Two systems are in use: the Bijur and the Alemite Automatic.

The Ford car requires a pressure gun grease which is usually made with a heavier oil than is used in cup greases.

One type of wall instrument board with special guns for special lubrication points. The display of oil and grease samples is a good merchandising feature

Franklin recommends steam cylinder oil. The remaining cars which perhaps make up half the cars on the roads today recommend fluid gear compound —600 W or the many greases which are made especially for transmission and differential gear lubrication.

The most common type of shackle which requires a fluid lubricant is the Tryon shackle used on Chevrolet, and a majority of the cars in the next higher price class. Hard or semi-solid greases must not be used in Tryon shackles if they are to function properly without excessive wear and expensive adjustments.

The larger Studebaker models have Fafnir shackles. These are of the ball bearing type and require a wheel bearing grease.

It is essential to have shackle and spring bolt lubricants of high viscosity so the lubricant will not be forced from the bearing surfaces. The lubricant must also resist water so it cannot be washed out.

King pins, tie rod and drag link joints—The same type of lubricant recommended for shackles should also be used for these steering mechanism parts.

For the foregoing lubrication points two general types of greases are generally used. One has a lime base and the other an aluminum base. There are some mixed lime and soda base greases for this purpose but the mixed base greases are said not to resist water as well as the straight lime or aluminum base greases.

Steering Gear—There are five general types of steering gears: cam and lever; worm and roller; worm and sector; worm and gear, and worm and nut. There is no standard recommendation for all types. Only for two types are recommendations standardized. These are the worm and nut, and worm and gear types. The recommendation is for heavy gear grease—S.A.E. No. 160.

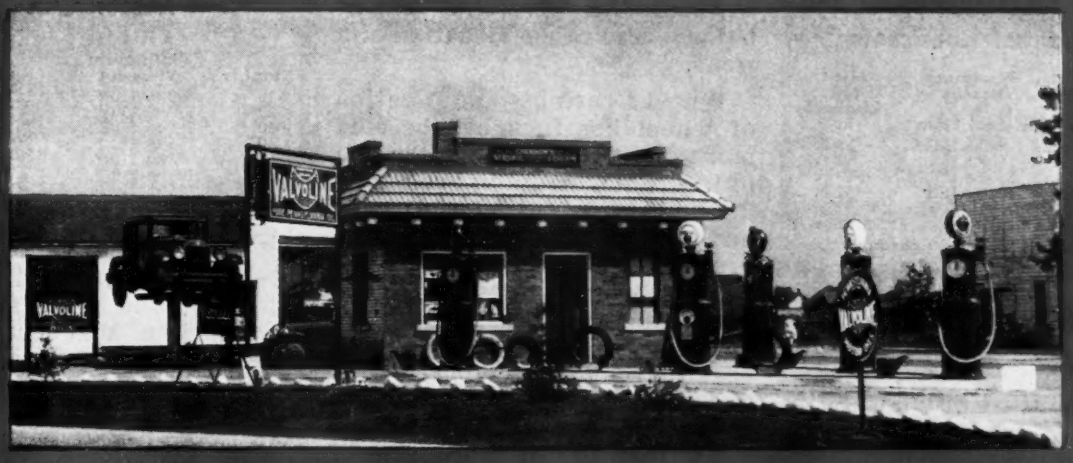
For the other three types some steering gear manufacturers recommend fibrous non-fluid greases now known as steering gear greases. Lead base grease is recommended by one car manufacturer for the worm and sector gear in his high priced cars. Other recommendations for the worm and sector type are heavy transmission greases like S.A.E. 160, or transmission oils like 600W and GMC A-150.

Recommendations for the worm and roller gears range from the special steering gear greases to heavy gear oils. A fibrous grease especially designed for steering gears and a high pressure chassis grease are recommendations for the cam and lever type.

Steering gear lubricants should not be injected with high pressure guns. Too much lubricant breaks down the packings in the steering gear housings. Too much also will work up the steering column and soil the clothes of the driver. Guns are now made which are forced away from the plug when the housing is loaded.

Water Pumps—There are three general types of water pump bearings. One is an oilless bearing which requires no lubrication. Another type requires occasional oiling with engine oil, and others require grease.

Grease for water pumps must not melt in hot water. It must



A Service Station of the Imperial Oil Corporation

Building New *Success* On *Established* Success

The gateway to the great playground of Northeastern Michigan, with its forest reserves and myriad lakes and fishing streams, is by way of the industrial cities of Saginaw and Bay City.

The motorist on his way to and from this region finds at his service the numerous, well-kept stations of the Imperial Oil Corporation, exclusive distributors in this territory for Valvoline—the *original* Pennsylvania oil.

This flourishing enterprise was founded on a modest beginning ten years ago, but its success was assured by organizing its business on an exclusive Valvoline franchise.

Well directed hard work and intelligent management on the part of the Imperial Oil Corporation was coupled with the consistent quality of Valvoline and constantly increasing demand for Valvoline. The result is Imperial today is the foremost factor in the distribution of petroleum products in Northeastern Michigan, controlling, owning and operating more than 200 modern service stations, merchandising Valvoline, the *original* Pennsylvania oil, and regularly broadcasting Valvoline's attractive radio program—"VINCENT LOPEZ AND HIS VALVOLINERS"—over station WMBC, Bay City, Mich.

A quality product and an *Independent* refiner that have been successful for more than 60 years—an up-to-date successful advertising and merchandising program—are factors for success in the Valvoline franchise.

Independent Distributors and Dealers who are interested in building A PERMANENT BUSINESS and making A PROFIT are invited to consider the Valvoline Franchise. Send the coupon today for full information.

VALVOLINE OIL COMPANY

Established 1866

General Offices: 3004 Carew Tower, Cincinnati, Ohio. Domestic Division Offices: New York, Chicago, Los Angeles. Refineries: Warren and East Butler, Pennsylvania. Foreign Offices: Liverpool, Paris, Hamburg, Johannesburg, Calcutta, Tokyo, Melbourne, Auckland and Buenos Aires.

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THE ORIGINAL PENNSYLVANIA OIL

(COUPON)

Valvoline Oil Company
3004 Carew Tower
Cincinnati, Ohio

Tell me about your Added-Value Franchise proposition.

Name_____

Address_____

Suggested S.A.E. Index Numbers for Transmission and Differential Lubricants

No.	Minimum Viscosity @ 100 F. NOT Less Than	Maximum Viscosity @ 100 F. Less Than	Must Not Channel at
80	No minimum	800 S.U.S.*	—10 F.
90	800 S.U.S.	1500 S.U.S.	0 F.
110	1500 S.U.S.	3000 S.U.S.	+10 F.
160	3000 S.U.S.	6000 S.U.S.	+35 F.
250	6000 S.U.S.	No maximum	No specification

*S.U.S. is Saybolt Universal seconds.

not absorb water. It must prevent leakage of water. Many pressure gun greases have a melting point of around 180 F. This is too low for the service required of a water pump lubricant. The grease of low melting point melts, part of it flows into the water stream and may clog the small water passages of the radiator, eventually causing improper cooling and overheating of the engine.

An expensive radiator cleaning job may result from the use of low melting point greases. And such a job means a dissatisfied customer.

Universal Joints—These connecting links in the power line of automobiles operate under terrific force. There are two general types: fabric and metal. The former requires no lubrication but special attention must be paid to the lubrication problem of metal joints.

A few cars have metal joints of their own manufacture but most cars have joints of one of the following five makes: Cleveland, Detroit, Mechanics, Spicer and Universal Products. The Mechanics joint requires transmission or similar heavy oil or fluid grease. All other makes require a special fibrous grease that will cling to the parts of the universal in spite of the great centrifugal force generated by the whirling joint. It also must withstand heavy pressure. Ford recommends pressure gun grease.

Universals in Buicks, Cadillacs, Chevrolets and La Salles are lubricated from the transmission.

Care should be taken not to overload the universals. To minimize the chances of overloading universals are usually fitted with plugs and not high pressure fittings. Car manufacturers who use plugs, warn against substituting high pressure fittings because they tend to throw the drive shaft out of balance and cause vibration and wear.

Wheel Bearings—Lubrication of wheel bearings has become more of a problem with the use of internal expanding brakes on all four wheels. All 1931 cars have internal brakes. The grease used in wheel bearings, especially front wheels, should be of such consistency that it will not melt and run into the brake mechanism. Some manufacturers have recommended fiber grease in the front wheel hubs instead of cup grease which was universally used a few years ago. Several car manufacturers still recommend soft cup grease for both front and rear wheel bearings. Some car manufacturers recommend transmission grease for the rear bearings.

The operator should be very careful not to overload the front wheel hub and the rear axle shaft bearings with grease. Overloading will break down the packing and allow the grease to work into the brakes and possibly cause a relining job.

Transmission and Differential—Free wheeling, herring-bone and constant mesh gears have brought about a new situation in transmission lubrication. Manufacturers of cars that have these new transmissions, recommend a good transmission oil or grease with low cold test for both summer and winter. Reo recommends a lead base grease for its herring-bone gear transmission. Free wheeling devices on several cars are integral with the transmission. The free-wheeling unit on the Auburn is separate from the transmission but requires the same type of lubricant as the transmission.

Lease base grease is generally recommended for differentials with hypoid gears. Passenger cars with hypoid gears include Pierce-Arrow, Packard, Cord and Duesenberg. Some models of Marmons also had this type of gear. Most other types of differentials may take a fluid grease of another base. The grease in both transmission and differential must stand considerable heat and must not break down under heat or pressure which is great between the gear teeth.

S.A.E. Index Numbers for Motor Oils

Number	Minimum Viscosity	Maximum Viscosity Less Than
10	90 @ 130 F.	120 @ 130 F.
20	120 @ 130 F.	185 @ 130 F.
30	185 @ 130 F.	255 @ 130 F.
40	255 @ 130 F.	75 @ 210 F.
50	75 @ 210 F.	105 @ 210 F.
60	105 @ 210 F.	125 @ 210 F.
70	125 @ 210 F.	150 @ 210 F.

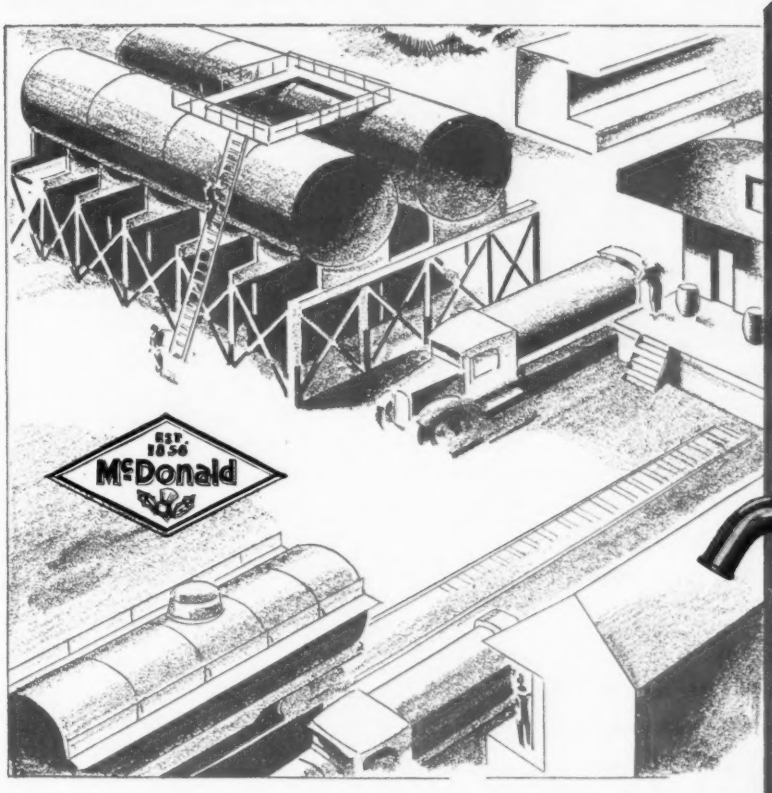
From this outline it will be seen that greases must be provided for six important lubrication functions. It is possible that one grease may be used for two or three functions but this is not true for all cars. The well equipped lubritorium will be supplied with the correct lubricants for any car that may be brought in.

Six different greases, however, will not be all the lubricants a station will need. In addition to three or four grades of engine oils, the station will require a light oil for use on the breaker arm pivots of distributors door and hood hinges, latches, starter and generator, petrolatum for the distributor cam and oil or cup grease for the distributor shaft according to the type of the distributor. Cup grease is required for some fan shafts and even on the wheel bearings of a few makes. Kerosine is needed for mixing with engine oil in the wet clutches of Hudson and Essex. Penetrating oil is needed for spring leaves.

If shock absorbers are to be serviced, a shock absorber oil or glycerine must be carried for this purpose.

Above all, the operator in order to give expert lubrication must know the requirements of each car. These requirements are too numerous to be left to memory. The operator should be equipped with a diagram of the chassis of each make and model of car and follow the diagram closely on each job. The diagram should show the type of lubricant each bearing of lubrication point requires and the operator should not diverge from the recommendations.

Get your OIL HANDLING EQUIPMENT ready for Summer Business



This is the ideal time to look over every piece of equipment you have—and get it ready for summer business.

And for the replacements you have—GET McDONALD EQUIPMENT. Then you know you're set for ALL seasons—summer or winter—with equipment that is GUARANTEED to do the work and IS doing the work in thousands of stations throughout the world.

Whatever your oil or gas handling requirements may be, McDonald can supply them. Make a check up on what you need and let us quote. Better do it now while there is time.

A. Y. McDONALD MFG. CO.
"The Home of the Swing Joint"
DUBUQUE, IOWA

Omaha Minneapolis Des Moines Kansas City Sioux City
Lincoln Denver

There's a McDonald Distributor Near You

McDONALD

TOWELS CAN KILL

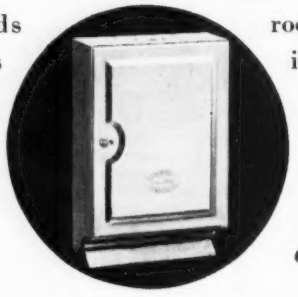
INSANITARY service station washrooms may be a far more serious threat to motorists than the perils of the open road. The common, repeatedly used cloth towel, and ordinary harsh toilet papers are responsible for the spreading of many contagious diseases and infections.

Onliwon Chromium-plated Cabinet for Towels

Protect the health of the customers that come to your stations, and your own employés, too. Install *Onliwon Towels and Toilet Tissue* in your washrooms. *Onliwon Service* means individual, clean, fresh towels and non-irritating pure toilet tissue. Protected from dust, dirt and other contamination by Onliwon Cabinets.

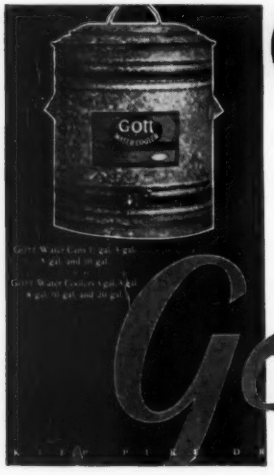
Onliwon Service guards company pocketbook as well as the public health. Onliwon Towels are double folded — a feature that gives them double strength and double absorbency. *Onliwon Cabinets* will not release more than one towel or two sheets of toilet tissue at a time. They stop waste and theft.

- Insist upon A. P. W. Onliwon — the original sanitary washroom service. For complete information write to the A. P. W. Paper Company, 1295 Broadway, Albany, N. Y.



Onliwon Chromium-plated Cabinet for Tissue.

Pioneers for Cleanliness since 1877



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When you have a GOTT Water Cooler handy, you will always be assured of a fresh supply of pure drinking water kept delightfully cool. *Order one from your supply store.. now!*

Gotkool

H. P. GOTT MFG. CO. • Winfield, Kansas

DRINKING WATER ALWAYS HANDY

New Books

MELLON Institute of Industrial Research, Pittsburgh, has just issued the Fourth Annual Supplement to its Bibliographic Bulletin No. 2. This supplement lists the books, bulletins, journal contributions, and patents of the institution's members during the calendar year 1930.

The institute also has published the 18th Annual Report of its director, Dr. E. R. Weidlein, which describes the investigational activities throughout the fiscal year ended Feb. 28, 1931.

Complimentary copies of these booklets will be sent to research workers, science teachers, and librarians upon request.

• • •

Oil Heating

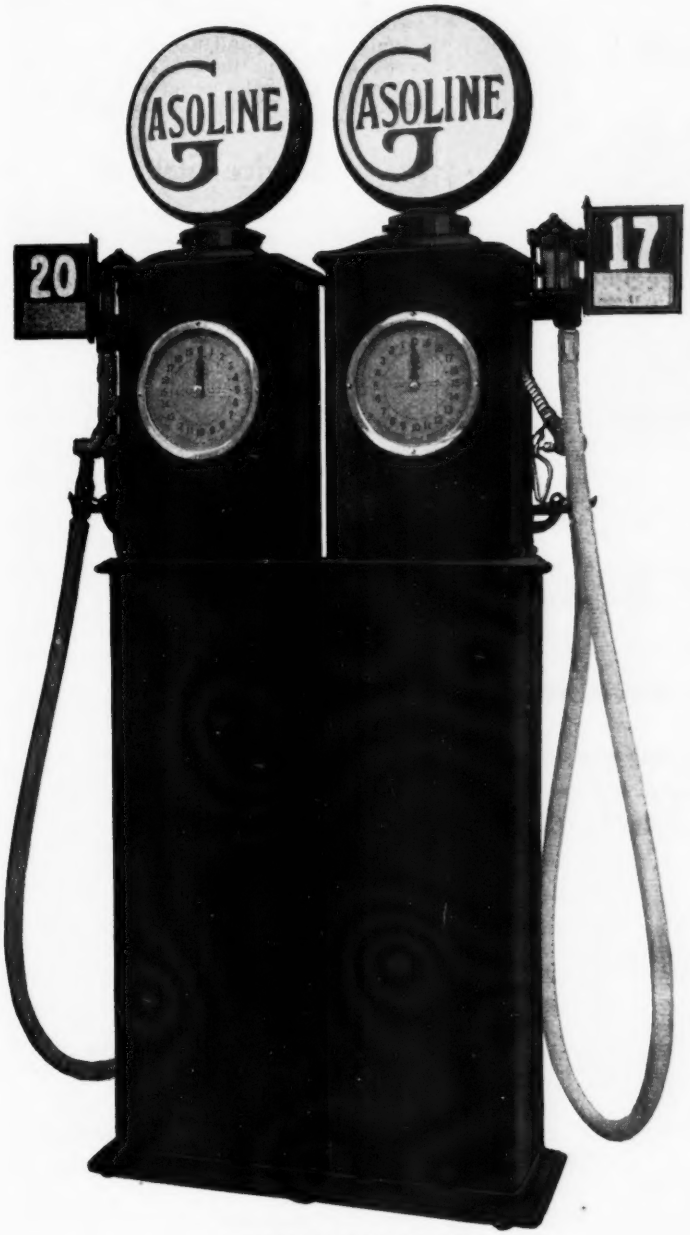
Every phase of the oil burner industry is discussed in the "Handbook of Oil Burnings" published in April by the American Oil Burner Association. It contains, besides charts, illustrations and tables, a treatise on oil, its sources, modern methods of refining, production, heat characteristics, comparative fuel costs, and so on.

It contains much other information of practical value to the man whose work requires a knowledge of oil burner heating, including data on the chemistry of combustion and flame, fundamentals of heat and heat transfer and the determination of heating capacity requirements.

The book may be obtained for $3 from the association headquarters at 342 Madison Ave., New York City.

Davey Compressor Co., Inc., Kent, O., has published a 16-page bulletin entitled "4 Air Compressors Went to School." The bulletin describes tests and comparisons of features made by the professor and associate professor of mechanical engineering at the Case School of Applied Science. It tells how the Davey air cooled compressor won honors in a 500-hour nonstop tests and in easy starting, cool operation, portability, and other tests.

The Only Way We Could Make Them Better . . . Was To Make Them Twins



SOUTHWEST M-222
Underwriters'
Label *of* Inspection

THE SOUTHWEST M-12 Meter Pump can now be secured mounted in pairs on a single base.

The twin double dialled pump unit eliminates much shifting and backing of cars and relieves the uncertainty of the driver who doesn't know just where to stop his car.

These pumps are equipped with a Ferro pumping unit and a Micro-Meter. . . . (Positive displacement type). The specially designed meter register prevents slipping of hands under all conditions. A solid glass front makes the meter dust-proof.

Mounted on a single heavy semi-steel base, the M-222 can be secured painted in two colors for dispensing both premium and regular gasoline. A raised dividing line emphasizes the separation of the two pumps.

Ask for Detailed Description of the M-222

METER PUMPS ✓ VISIBLE PUMPS
PRICE SIGNS ✓ EZMTY BARREL LIFTS
AIRPORT FUELING SYSTEMS
CAR WASHERS
Manufacturers and Designers

The Service Station is Your Point of Contact with the Public.. *It should*

create a Good Impression

Southwest Pump Company

BONHAM, TEXAS

WHEN YOU NEED BULK TANKS IN A HURRY

THERE are times when an additional tank is needed at one or at a number of Bulk Stations.
No matter how fast you want them, Leader can furnish and install these tanks and all accessory equipment and have them ready for operation faster than any other agency on earth.

Telephone, or wire, or write

LEADER IRON WORKS, INC.

2112 NO. JASPER ST. DECATUR, ILLINOIS

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE—RED OILS
WAX—PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity—this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London—Hamburg

Cable Address—JASBER Oil City *All Codes*

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Eldora, Ia.—White Eagle Oil Co., 1400 Federal Reserve Bank Bldg., Kansas City, Mo.

Fairfield, Ia.—Aukland Stubbs Co.

Forest City, Ia.—Farmers Co-operative Oil Co.

Jefferson, Ia.—Laurence Quinlan, Atlantic, Ia.

Storm Lake, Ia.—Standard Oil Co. of Indiana, 910 S. Michigan St., Chicago, Ill.

Owatonna, Minn.—P. D. Farrington.

Rapid City, S. D.—McKeever Mid West Oil Co.

Hubbard, O.—Rajah Oil & Refining Co., 1930 Poland Ave., Youngstown, O.

Barron, Wis.—Barron County Farm Union.

Mt. Gilead, O.—Merritt White, Fredericktown.

Piketon, O.—Walter Creameans.

Hope, O.—Oscar Coe.

West Bend, Wis.—Joseph Poole, Antigo, Wis.

West Bend, Wis.—Carl Hahn.

Polson, Mont.—James Denton.

Martinsburg, Ia.—B. H. Davis.

Antigo, Wis.—White Eagle Oil Co., 1400 Federal Reserve Bank Bldg., Kansas City, Mo.

Veblen, S. D.—Consumers' Home Oil Co., Lidgerwood, N. D.

Iowa City, Ia.—Continental Oil Co., Ponca City, Okla.

Cedar Falls, Ia.—Jens Olsen & Sons, Waterloo, Ia.

Benkleman, Neb.—E. W. Artist.

Minneapolis, Minn.—White Eagle Oil Corp., 606 Vandalia, St. Paul, Minn.

Waterbury, Conn.—The Texas Co., Chrysler Bldg., New York. N. Y.

Mankato, Minn.—Mutual Oil Co.

Mason City, Ia.—White Eagle Oil Co., 606 Vandalia, St. Paul, Minn.

Cedar Rapids, Ia.—Thomas Sales Corp., 311 Merchants Natl. Bank Bldg.

Greenfield, O.—Shell Petroleum Co., Shell Bldg., St. Louis, Mo.

Blue Hill, Neb.—George Corner.

Aurora, Kan.—Aurora Oil Co.

Newark, N. J.—Ellveeay Newspaper Workers Building & Loan Association.

Holland, Ia.—Grundy County Farmers Union.

Minneapolis, Minn.—Oscar Elmburg, 4401 Harriet Ave.

Alamosa, Colo.—The Texas Co., 929 S. Broadway, Los Angeles, Calif.

Hearne, Tex.—Gulf Refining Co., Frick Bldg. Annex, Pittsburgh, Pa.

Liberty, Tex. — Magnolia Petroleum Co., Magnolia Bldg., Dallas, Tex.

Helena, Mont.—The Texas Co., 929 S. Broadway, Los Angeles, Calif.

Omeonta, N. Y.—Heber Hooks.

Norfolk, Va.—Standard Oil Co., of New Jersey, 26 Broadway, New York, N. Y.

Ridgewood, N. J.—Standard Oil Co., of New Jersey, 26 Broadway, New York, N. Y.
Wheeling, W. Va.—Shell Petroleum Corp., Eastern Petroleum Products, Inc., Shell Bldg., St. Louis, Mo.
Brooklyn, N. Y. — Classon Avenue Corp., 26 Court St.
Loudonville, O.—A. M. Locke.
Grafton, O.—Everett Croul.
Sigourney, Ia.—Farmers' Union Oil Co. of Keokuk Co.
Laurel, Neb.—A. S. Hirsch.
Waterloo, Ia.—White Eagle Oil Corp., Kansas City, Mo.
Danbury, Conn.—Leonard Blondell.
Hartford, Conn.—Frank D. Kent, 885 Albany Ave.
Yonkers, N. Y. — Axel Johinson, Glenville, N. Y.
Caldwell, N. J.—Frederics, Ltd., Inc., 252 Bloomfield Ave.
Fickle, Ind.—Fred Thomas.
Phillips, Wis.—Joseph Bodewin.
Willmar, Minn.—Kallevig Motor Co.
Wolsey, S. D.—C. O. Lindblad.
Crosby, Minn.—Sinclair Refining Co., Conway Bldg., Chicago, Ill.
Brainerd, Minn. — Crow Wing Co. Farmers' Co-op Oil Co., 514 Laurel St.
Brainerd, Minn.—Brainerd Oil Co.
Lakewood, O.—Sun Oil Co., 1428 S. Penn Sq., Philadelphia, Pa.
Cleveland, O.—Standard Oil Co. of Ohio, Midland Bank Bldg., Cleveland, O.
Grandville, Mich.—Lenger & Kol.
Prairie du Sac—Winona Oil Co.
Le Center, Minn.—Web Oil Co.
Mitchell, S. D.—Lyle Seitz.
Minneapolis, Minn.—White Eagle Oil Corp., Kansas City, Mo.
Kewanee, Ill.—"Butter" Peden and Ray Haley
New Castle, Ind—White Petroleum Corp., Shirley.
New London, Conn.—Simon Green, Blinman and Truman Sts.
Altoona, Pa.—Harbor Oil & Gas Co., Pittsburgh, Pa.
Indiana, Pa.—Whitesell & Miller.
Mason City, Ia.—White Eagle Oil Corp., Kansas City, Mo.
Hibbing, Minn.—White Eagle Oil Corp., Kansas City, Mo.
Mankato, Minn.—L. F. Kennedy, 302 W. 11 St.
Cleveland, O.—Sun Oil Co., 1428 S. Penn Sq., Philadelphia, Pa.
Portsmouth, O.—Miss Alma Heinisch.
Oskaloosa, Ia.—N. L. Harris, 911 High Ave. W.
Knightstown, Ind.—Prof. Homer H. Cooper.
Madison, Ind.—Mr. Clarence Otter, Second St.
North Vernon, Ind.—M. T. Merideth.
Cleveland, O.—S & J Service Co.
Lorain, O.—Columbia Refining Co., 2890 E. 83rd St., Cleveland, O.
Poughkeepsie, N. Y.—Herbert Kniffen.
Moline, Ill.—L. O. Jahns, 520 19th Ave.
Hamburg, Ia.—Co-Operative Produce Association.
Minneapolis, Minn.—John W. Danielson, 3241 Park Ave.
Corning, Ia.—Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa, Okla.
Lost Nation, Ia.—Edward Mohl.
Lost Nation, Ia.—Donald Nodurft.
Hamburg, Ia.—M. F. Brookshier.
Clarinda, Ia.—Mark Goodwin.
Carlton, Minn.—Mike Blin.
Carlton, Minn.—G. A. Anderson.
Watson, Minn.—Peder Hildahl, Granite Falls.
Castelwood, S. D.—J. A. Mueller.
Mt. Gilead, O.—M. B. White.
Waverly, O.—Arthur Keiser.
Millersburg, O.—Paul Rumbacher.
Baraga, Mich.—John Swanson and Theodore Stenson.
Chippewa Falls, Wis.—Crawford Oil Co.

When a **BETTER WAY** *is shown* . . . . Old Methods come in question . . . .

The Master Explosion Resisting Motor and Switch is a revolutionary improvement in gasoline pump equipment.

Motor and switch are built together in the same housing into a compact unit which bears Underwriters' label of approval and inspection.

It eliminates the extra wiring, splicing and piping required where motor and switch are mounted separately and provides these compelling advantages:

A less expensive installation
A less hazardous installation
A neater, more compact installation

This simplified construction linked with the fine quality of workmanship with which Master Motors have always been identified merit investigation by every gasoline pump builder and user.

Write for complete information.

THE MASTER ELECTRIC COMPANY
Dayton, Ohio

POWER DIAMOND
MASTER GUARANTEED MOTORS

Special Muleskin Folio

Your Name in Gold FREE

Complete Net $7.50

362K—Special made folio from heavy double weight muleskin in handsome shark grain. Has three pockets, heavy leather straps and handle, gold lock, bottom reinforced with steel studs. Inner case contains six 4-oz. bottles, partitioned separately, lined with red velvet. Metal capped corks furnished. Case also contains five grease jars.

Other styles in our FREE Catalog

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Builders of Sales Luggage

614 Delaware. Kansas City, Mo.

Our Combination Offer For Testing Oils & Fuels Should Interest All Dealers In These Commodities

Write us for Details

THE DETROIT TESTING LABORATORY

554 Bagley Avenue
Detroit, Michigan

ON THE LAZY BENCH

"Well," reported the new salesman, swinging jauntily into the office, "I got two orders from Toughnut & Co. today."

"Fine; fine," exclaimed the sales manager enthusiastically.

"Yep. One order to get out, and the other to stay out."

* * *

This is a trick, so don't say we didn't warn you. Read this sentence:

Federal fuses are the result of years of scientific study combined with the experience of years.

Now, count the f's in that sentence. Only once; don't go back and count them again. Below you'll find the answer, and it will tell you something about how good your brain is.

There are six f's in the sentence you read in the italic type paragraph. An average intelligence recollects three of them. If you spotted four, you're above average. If you got five, you can turn up your nose at most anybody. If you caught all six, you're a genius, and a lot too good to be wasting your time on foolishness like this.

—Wall Street Journal

* * *

"So Joe was the life of the party?"

"Yeah. He was the only one who could talk louder than the radio."

* * *

Restaurant Manager (to orchestra conductor)—I wish you'd display a little more tact in choosing the music. We's got the National Association of Umbrella Manufacturers this evening, and you've just played "It Ain't Gonna Rain No More."

* * *

Potts—"I hear your daughter married a struggling young man."

Totts—"Well, he did struggle but he couldn't get away."

—The Arknatco Louisiana Oil Refining Co. and Arkansas Natural Gas Co.

* * *

With all due respect to Darwin, we sometimes wonder if man's descent from the monkey has actually started yet.

—Union Oil Bulletin Union Oil Co. of California

Habit Is Strong

The traffic cop had just undergone an operation. Shortly after coming out from under the anesthetic, he asked the nurse the usual question:

"Did I say anything while I was under the ether?"

"I'll say you did!" the nurse chuckled. "Just when everything was ready for the incision, you tried to whistle at the surgeon and then you yelled: 'Hey, you! What's your hurry? Let's see your operator's license!' "

—Magnolia Oil News Magnolia Petroleum Co.

* * *

A traveling salesman found himself in a village hotel dining room when a heavy downpour of rain set in. Addressing the waitress, he remarked: "It looks like the flood."

"Like what?" the girl inquired.

"Like the flood. You've read of the flood, and how the ark landed on Mount Ararat, haven't you?"

"No, sir. I haven't seen a newspaper for three days," confessed the waitress.

* * *

Must Run Fast

It will soon come to the point where all insurance companies will ask a Mexican applicant whether he intends to run for the Presidency.

—The Gas Line West Penn Oil Co.

* * *

"Lady, won't you help a poor man that lost his family in the Florida flood and all his money in the Wall Street crash?"

"Why, you are the same man that lost his family in the Galveston flood and was shell shocked during the war."

"Ain't it so, lady? I'm the unluckiest guy in the world."

—Magnolia Oil News Magnolia Petroleum Co.

* * *

Jokesmith: "This joke ought to be good. I've had it in my head for ten years."

Sarcastic Editor: "Sort of aged in the wood, I suppose."

—Magnolia Oil News Magnolia Petroleum Co.

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	May 23	May 16
Production east of Rockies	1,900,450	1,890,800
Increase		9,650
Total production in U. S.	2,437,150	2,426,800
Increase		10,350
Crude oil imports	104,145	147,145
Decrease		43,000
Total new crude supply	2,541,295	2,573,945
Decrease		32,650

OKLAHOMA

	May 23	May 16
Allen Dome	11,950	10,500
Asher	650	650
Asher, West	7,350	7,050
Blackwell	2,900	2,900
Bowlegs	15,600	14,700
Braman	2,100	1,900
Bristow-Slick	12,750	12,400
Burbank	13,000	13,500
Carr City	14,500	13,450
Cromwell	4,850	5,250
Cushing	13,200	13,200
Davenport	900	950
Duncan Dist.	6,450	6,250
Earlsboro	19,300	19,300
Earlsboro, East	19,250	19,400
Earlsboro, So.	5,100	6,550
Garber	3,900	4,050
Graham	4,100	4,150
Healdton	11,000	10,850
Hewitt	6,100	6,100
Hubbard	1,000	950
Konawa	9,250	11,250
Little River	25,150	26,700
Little River, E.	6,000	5,000
Logan Co.	3,650	3,600
Maud	2,550	2,750
Mission	9,600	10,550
Oklahoma City	143,400	173,600
Okmulgee, No.	9,100	9,150
Okmulgee, So.	4,950	4,950
Osage (Outside Burbank)	22,950	21,250
Papoose	2,000	2,150
Pearson	600	700
Sasakwa	2,400	2,300
St. Louis	22,850	23,400
Scholem-Alechem	13,400	13,200
Searight	4,600	4,050
Seminole	14,150	14,400
Seminole, East	1,800	1,700
Thomas	600	600
Tonkawa	5,700	6,200
Wewoka	9,200	9,200
Yale-Jennings	5,950	6,050
Others	46,900	47,250
Total, Okla.	542,700	574,050
Decrease		31,350

KANSAS

Augusta-Fox Bush	2,800	2,900
Churchill	3,150	3,050
El Dorado-Towanda	12,600	12,550
Florence-Covert	850	800
Greenwood Co.	15,750	15,900
Oxford	2,200	2,150
Peabody-Elbing	2,400	1,900
Rainbow Bend	1,450	1,450
Ritz	5,200	5,700
Russell	3,350	3,200
Sedgwick Co.	17,100	17,650
Voshell	18,200	17,850
Others	21,500	22,700
Total, Kans.	106,550	107,800
Decrease		1,250

NORTH LOUISIANA

Caddo, light	7,100	7,250
Caddo, heavy	2,750	2,750
Cotton Valley	1,850	1,850
De Soto and Red River	2,700	2,700
Haynesville	5,700	5,700
Holly	550	550
Homer	3,250	3,250
Sarepta Carterville	1,150	1,200
Urania	4,450	4,550
Zwolle	7,900	8,500
Others	1,500	1,500
Total, N. La.	38,900	39,800
Decrease		900

ARKANSAS

Champagnolle	3,000	3,000
El Dorado	3,600	3,650
Lisbon	700	700
Nevada	1,000	1,000
Smackover, light	4,250	4,250
Smackover, heavy	31,550	31,500
Stephens	850	850
Others	1,700	1,800
Total, Ark.	46,650	46,750
Decrease		100

ROCKY MOUNTAIN

Wyoming

Big Muddy	1,900	1,900
Elk Basin	600	650
Grass Creek	2,050	2,100
Labarge	1,000	1,350
Lance Creek	200	200
Lost Soldier	4,350	4,400
Oregon Basin	1,400	1,400
Rock River	1,950	1,950
Salt Creek	25,850	25,100
Others	3,650	3,750
Total, Wyo.	42,950	42,800
Increase		150

Montana

Cat Creek	1,050	1,100
Pondera	1,300	1,600
Sunburst	4,400	4,400
Others	1,350	1,350
Total, Mont.	8,100	8,450
Decrease		350

Colorado

Florence	300	350
Fort Collins	1,000	1,100
Moffat (Craig)	950	1,000
Others	1,700	1,700
Total, Colo.	3,950	4,150
Decrease		200

New Mexico

Artesia	550	500
Bal. Eddy Co.	300	200
Hobbs High	36,600	36,600
Bal. Lea Co.	4,350	4,500
Hogback	450	450
Rattlesnake	1,050	1,050
Table Mesa	100	100
Total, N. M.	43,400	43,400
Total, Rocky Mountain	98,400	98,800
Decrease		400

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Carson Co.	4,400	4,750
Gray Co.	45,600	45,300
Hutchinson Co.	8,800	9,100
Wheeler Co.	250	200
Others	200	1,900
Total, Panhandle Texas	59,250	61,250
Decrease		2,000

North Texas

	May 23	May 16
Archer Co.	12,000	12,050
Burkburnett	6,400	6,400
Electra	9,200	9,100
Iowa Park and K. M. A.	3,500	3,550
Montague-Cooke	4,300	5,300
Wilbarger	10,300	9,050
Young Co., No.	8,900	10,300
Others	1,150	1,200
Total, N. Tex.	55,750	56,950
Decrease		1,200

West Central Texas

Brown Co.	3,500	3,500
Callahan Co.	2,300	2,300
Coleman Co.	1,950	1,950
Eastland-Desdemona	3,700	3,700
Jack Co.	1,200	1,150
Palo Pinto Co.	350	350
Shackleford Co.	3,750	3,750
Stephens Co.	4,500	4,500
Throckmorton Co.	350	350
Young Co., So.	3,300	3,300
Others	900	900
Total, West Cen. Tex.	25,800	25,750
Increase		50

West Texas

Crane and Upton Cos.	23,700	23,900
Crockett Co.	1,750	1,700
Ector Co.	7,300	6,900
Howard Co.	29,350	29,000
Jones Co.	1,400	1,400
Mitchell and Scurry Cos.	1,950	1,900
Reagan Co.	18,450	18,350
Winkler Co.	45,100	44,350
Yates	71,300	68,900
Bal. Pecos Co.	3,500	3,950
Others	7,300	7,100
Total, West Texas	211,100	207,450
Increase		3,650

East Central Texas

Boggy Creek	2,100	1,900
Corsicana-Powell	4,150	4,550
Currie	300	300
Mexia	3,500	3,400
Nigger Creek	150	150
Richland	100	100
Van Zandt	42,550	44,950
Wortham	500	500
Others	50	50
Total, E. Cen. Tex.	53,400	55,900
Decrease		2,500

East Texas

Rusk County:		
Joiner	118,000	92,500
Kilgore	124,250	116,400
Gregg County:		
Longview	61,500	48,550
Total, E. Tex.	303,750	257,450
Increase		46,300

Southwest Texas

Chapmann Abbott	3,650	3,750
Dale	300	300
Darst Creek	19,600	20,150
Laredo Dist.	13,100	13,200
Luling	8,600	8,650
Lytton Spgs.	700	700
Salt Flat	12,200	12,700
Somerset	1,250	1,300
Others	250	250
Total, S. W. Texas	59,650	61,000
Decrease		1,350
Total, Texas (Outside Gulf Coast)	768,700	725,750
Increase		42,950

GULF COAST

Coastal Texas

Barbers Hill	28,850	30,600
Batson	1,000	1,000
Big Creek	2,750	2,900
Blue Ridge	1,200	1,200
Boling	950	800
Damon Mound	1,300	1,350
Esperson	2,000	2,100
Fannett	500	500
Goose Creek	4,500	4,200
Hankamar	2,850	2,400
Hull	6,800	6,250
Humble	9,300	9,550
Moss Bluff	350	350
No. Dayton	500	600
Orange Co.	1,800	1,900
Orchard	900	900
Pettus	7,150	7,200
Pierce Junct.	10,250	8,350
Port Neches	1,400	1,400
Raccoon Bend	8,250	8,200
Refugio Co.	30,300	30,750
Saratoga	1,050	1,050
Somerville	2,400	2,550
Sour Lake	1,900	1,900
So. Liberty	1,950	2,000
Spindletop	9,250	9,050
Sugarland	11,600	11,650
West Columbia	4,100	4,100
Others	1,300	1,800
Total, Coastal Texas	156,450	156,600
Decrease		150

Coastal Louisiana

Edgerly	350	400
Evangeline	650	650
Hackberry, E.	1,650	1,700
Hackberry, Old	750	750
Lake Barre	2,000	2,150
Lockport	7,550	8,000
Port Barre	1,700	1,700
Sulphur Dome	4,400	3,000
Vinton	5,600	5,800
White Castle	1,000	2,400
Others	5,150	4,150
Total, Coastal La.	30,800	30,700
Increase		100
Total, Gulf Coast	187,250	187,300
Decrease		50

CALIFORNIA

	May 23	May 16
Dominguez	11,500	11,700
Elwood-Goleta	34,300	34,400
Huntington Beach	21,400	21,900
Inglewood	15,800	15,800
Kettleman Hills	43,300	39,000
Long Beach	86,700	87,500
Midway-Sunset	51,600	52,300
Playa del Rey	28,600	30,000
Santa Fe Spgs.	72,300	72,700
Seal Beach	15,100	14,000
Ventura Ave.	42,500	43,600
Others	113,600	113,100
Total, Calif.	536,700	536,000
Increase		700

EASTERN

(Not including Mich.)	103,000	102,150
Increase		850

MICHIGAN

Mt. Pleasant	6,400	6,500
Muskegon	1,750	1,750
Saginaw	150	150
Total, Mich.	8,300	8,400
Decrease		100

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended May 22 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 22
Plants Reporting....	10	23	23	10	10	76
Da. Av. Cap. (bbls.)..	94,000	162,500	107,400	71,500	60,700	496,100
Da. Cracking Capacity	53,200	64,600	23,100	26,250	31,700	198,850
Da. Av. Crude Runs..	56,856 + 0.4	104,295 — 3.8	55,417 — 5.3	40,214 — 12.8	48,975 + 12.5	305,757 — 2.4
Da. Av. Other Oil....	3,618 — 7.7	3,303 + 38.8	4,189 +227.5	....	19,677 + 6.5	30,787 + 16.1
GASOLINE—Gallons						
Stocks, May 15.....	26,585,000	52,178,000	32,080,000	15,212,000	4,483,000	130,538,000
Prod. 5-15 to 5-22....	10,576,000 + 0.6	17,829,000 — 3.1	8,150,000 — 11.2	3,876,000 — 14.5	7,055,000 — 4.1	47,486,000 — 5.0
Ship. 5-15 to 5-22....	10,731,000 — 4.7	17,185,000 + 14.6	9,758,000 + 8.6	3,008,000 — 4.0	7,018,000 — 3.3	47,700,000 + 4.5
Stocks, May 22.....	26,430,000 — 0.6	52,822,000 + 1.2	30,472,000 — 5.0	16,080,000 + 5.7	4,520,000 + 0.8	130,324,000 — 0.2
Ratio Sales to Prod...	101.5%	96.4%	119.7%	77.6%	99.5%	100.5%
KEROSINE—Gallons						
Stocks, May 15.....	7,203,000	13,464,000	1,816,000	28,000	316,000	22,827,000
Prod. 5-15 to 5-22....	1,442,000 — 8.1	2,083,000 — 8.7	873,000 — 5.6	....	536,000 + 41.1	4,934,000 — 4.3
Ship. 5-15 to 5-22....	1,932,000 + 0.3	2,311,000 + 1.8	883,000 — 13.9	5,000 +400.0	373,000 — 10.8	5,504,000 — 2.4
Stocks, May 22.....	6,713,000 — 6.8	13,236,000 — 1.7	1,806,000 — 0.6	23,000 — 17.9	479,000 + 51.6	22,257,000 — 2.5
Ratio Sales to Prod...	134.0%	110.9%	101.1%	.....	69.6%	111.6%
STOVE DISTILLATE—Gallons						
Stocks, May 15.....	749,000	6,015,000	610,000	115,000	58,000	7,547,000
Prod. 5-15 to 5-22....	556,000 + 25.8	503,000 — 11.0	27,000 — 82.4	36,000	45,000 + 15.4	1,167,000 — 5.5
Ship. 5-15 to 5-22....	437,000 + 11.5	563,000 + 21.3	79,000 — 73.1	51,000 — 3.8	53,000 + 35.9	1,183,000 — 4.8
Stocks, May 22.....	868,000 + 15.9	5,955,000 — 1.0	558,000 — 8.5	100,000 — 13.0	50,000 — 13.8	7,531,000 — 0.2
Ratio Sales to Prod...	78.6%	111.9%	292.5%	141.7%	117.8%	101.4%
GAS OIL—Gallons						
Stocks, May 15.....	4,482,000	34,856,000	3,171,000	4,738,000	8,344,000	55,591,000
Prod. 5-15 to 5-22....	854,000 + 10.0	2,107,000 — 14.9	68,000 — 90.3	502,000 — 15.2	2,782,000 + 23.6	6,313,000 — 7.1
Ship. 5-15 to 5-22....	626,000 + 19.2	1,159,000 +107.3	332,000 — 53.5	619,000 +105.0	2,604,000 + 12.6	5,340,000 + 21.0
Stocks, May 22.....	4,710,000 + 5.1	35,804,000 + 2.7	2,907,000 — 8.3	4,621,000 — 2.5	8,522,000 + 2.1	56,564,000 + 1.8
Ratio Sales to Prod...	73.3%	55.0%	488.2%	123.3%	93.6%	84.6%
FUEL OIL—Gallons						
Stocks, May 15.....	12,692,000	54,580,000	62,914,000	23,119,000	18,508,000	171,813,000
Prod. 5-15 to 5-22....	4,721,000 + 2.1	5,983,000 — 10.1	6,470,000 + 12.3	5,734,000 — 19.9	5,632,000 + 26.4	28,540,000 — 0.4
Ship. 5-15 to 5-22....	4,565,000 — 17.5	6,058,000 + 22.3	5,286,000 — 10.7	4,264,000 + 13.7	5,160,000 — 9.9	25,333,000 — 2.1
Stocks, May 22.....	12,848,000 + 1.2	54,505,000 — 0.1	64,098,000 + 1.9	24,589,000 + 6.4	18,980,000 + 2.5	175,020,000 + 1.9
Ratio Sales to Prod...	96.7%	101.3%	81.7%	74.4%	91.6%	88.8%

Gasoline Produced by Various Methods, Week Ended May 22

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	5,777,000	54.6	11,548,000	64.8	5,270,000	64.7	3,623,000	93.5	3,367,000	47.7	29,585,000	62.3
Cracked.....	3,838,000	36.3	5,408,000	30.3	2,230,000	27.4	107,000	2.8	2,836,000	40.2	14,419,000	30.4
Natural.....	961,000	9.1	873,000	4.9	650,000	7.9	146,000	3.7	852,000	12.1	3,482,000	7.3
Total.....	10,576,000		17,829,000		8,150,000		3,876,000		7,055,000		47,486,000	

+ or — columns are % change from previous week.

Gasoline Shipments Increase at Mid-Continent Plants

Staff Special—By Telegraph
TULSA, May 26

GASOLINE shipments from Mid-Continent refineries increased 2,070,000 gallons in the week ended May 22 over shipments the preceding week. The gains were in the Oklahoma and North Texas districts. Shipments were smaller from other districts.

Crude oil runs were 7500 barrels daily average less than in the week before, resulting in a curtailment of 2,400,000 gallons in gasoline output. Stocks were reduced 200,000 gallons. Kansas and North Texas plants were the only ones to draw on stocks.

Kerosine stocks were lowered 500,000 gallons. Distillate stocks were reduced slightly. Gas oil stocks increased 1,000,000 gallons. Fuel oil stocks increased 3,200,000 gallons.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 22. Change in stocks figures from April 24.

GASOLINE

	Gallons
Production	192,450,000
Shipments	190,893,000
Net change in stocks	+1,557,000
Ratio sales to production	99.2%

KEROSINE

	Gallons
Production	20,974,000
Shipments	22,367,000
Net change in stocks	—1,393,000
Ratio sales to production	106.6%

STOVE DISTILLATE

	Gallons
Production	4,850,000
Shipments	4,821,000
Net change in stocks	+29,000
Ratio sales to production	99.4%

GAS OIL

	Gallons
Production	29,486,000
Shipments	19,767,000
Net change in stocks	+9,719,000
Ratio sales to production	67.0%

FUEL OIL

	Gallons
Production	110,993,000
Shipments	102,419,000
Net change in stocks	+8,574,000
Ratio sales to production	92.3%

Increases in Rates Boost Gasoline Tax Dodging

TULSA, May 23.—Higher gasoline taxes result in widespread evasions of the tax according to conclusions of the Mid-Continent Oil & Gas Association which has made a survey of conditions in Oklahoma.

Tax evasion through fake use of the farmer exemption is strongly indicated in recent Oklahoma tax reports. In the first quarter sales of 70,329,478 gallons of gasoline were reported to the state, a gain of 2.22 per cent or 1,528,567 gallons over the same quarter in 1930.

Gasoline exempted from the tax under claim it was used in stationary engines or on farms in the first quarter totaled 4,461,848 gallons. Only 2,297,588 gallons were exempted in the first quarter of 1930. The increase in tax exemption was 94.2 per cent while total consumption increased only 2.22 per cent. Taxed gallonage dropped 0.95 per cent.

Some months were worse than others. In January 1,478,592 gallons of gasoline were reported sold to farmers for tax exempt purposes. This compares with 314,467 gallons in January, 1930, an increase this year of 370.19 per cent.

Other avenues of tax evasion such as by blending kerosine with natural gasoline are not as measurable as the exemption evasion, but are believed by the Mid-Continent association to be large.

Ohio Grants Jobbers 3% Deduction from Tax

CLEVELAND, May 19. — Ohio's gasoline tax law has been revised to tax gasoline imports or receipts and to allow distributors 3 per cent to cover evaporation, shrinkage and unaccounted for losses. The revised law becomes effective Sept. 1, 1931.

In the revised act gasoline made within the state is to be deemed "received" when it is loaded into tank cars for delivery within the state or placed in any tank from which sales or deliveries are made other than by tank car.

The revisions take into consideration the changing modes of gasoline transportation. Gasoline entering the state by boat or pipeline is to be deemed "received" when it is loaded on tank cars or other tanks at terminals or tank farms for delivery or sale in the state.

The act provides for the licensing of distributors who must post a bond of $5000 with the state tax commission. If a distributor's credit becomes impaired the commission may require a bond up to $25,000.

Gasolines
California Pennsylvania
Venezuela Smackover
"Wilzol"—Benzol Motor Fuel

Naphthas
Paint and Varnish
Blending Cleaners

Natural Gasolines
All Grades

Stabilized Natural Gasolines

Rubber Solvent Benzol

Fuel and Gas Oils

Domestic Furnace Oils

Kerosenes Motor Oils

Neutral Oils
Viscous Non-Viscous

Cylinder Stocks
Steam Refined Filtered and Bright
Sharples Stocks

Paraffine Wax Paraffine Oils

Turpentine Substitutes

Industrial
Oils and Greases

WILLOCK
OIL CORPORATION
Pittsburgh, Pa.

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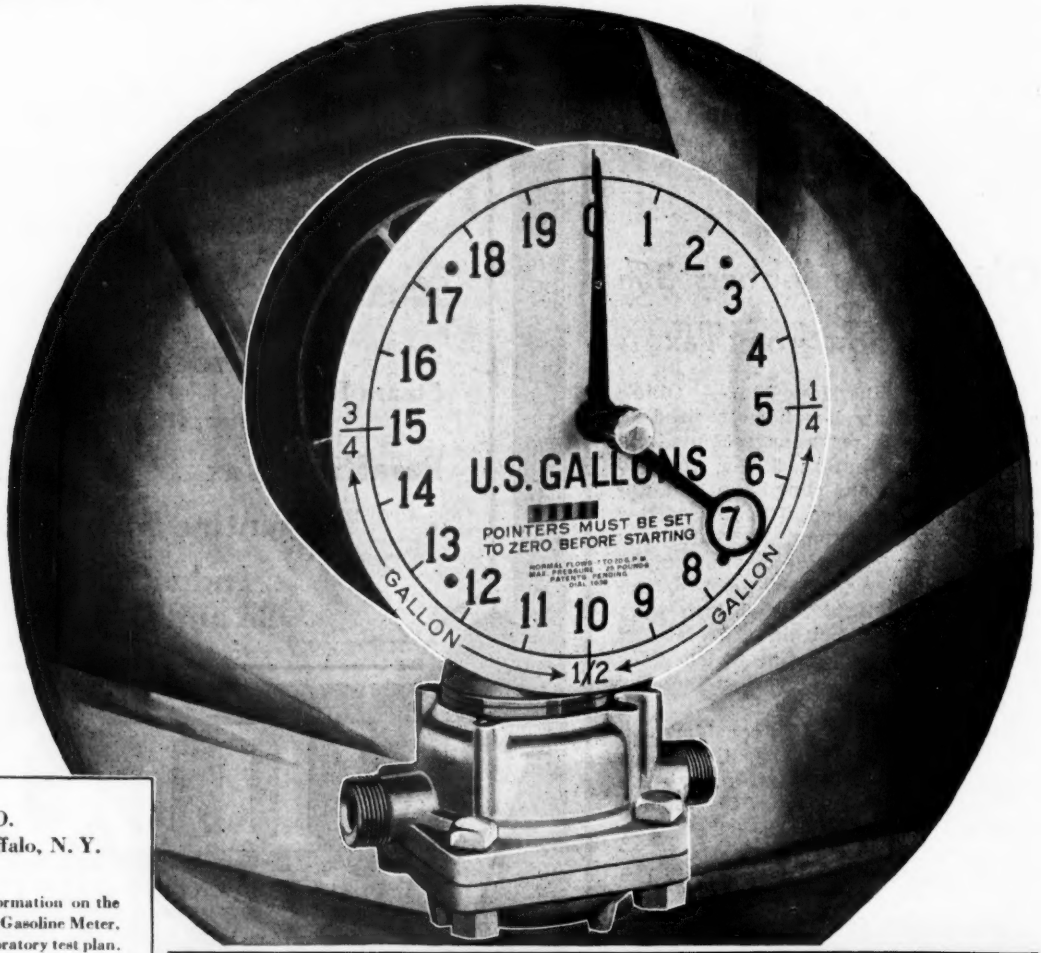
BUFFALO GASOLINE METERS



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Refinery - Tank Wagon Markets

General Price Situation Shows Little Change; Activity Increases in Some Markets

CLEVELAND, May 26

THERE was little change in the general refinery price situation in the United States in the week ended May 23. Trading was on a somewhat smaller scale in some areas, while in others there was a noticeable increase in activity. Price trends likewise were not uniform, recessions being recorded in some areas and rallying tendencies in others.

Reports current on the west coast that tank wagon and service station prices of gasoline would be advanced shortly by major companies stimulated brisk trading in tank car markets. U. S. Motor gasoline advanced 0.25 cent to 3.25 cents on the low end of the market.

In the middle west, open market buying of gasoline declined because of inclement weather. And by virtue of the fact that the majority of jobbers in this territory are under contract, a decline in open market buying causes considerable distress material to be offered. Tank car prices generally receded 0.125 cent in the Mid-Continent.

The Chicago market was steady despite the easier Mid-Continent situation, the majority of U. S. Motor quotations to jobbers remaining at 2.75 to 3.25 cents at Chicago. The sale of 1,000,000 gallons of U. S. Motor gasoline at 5.49 cents, delivered Detroit, was reported in the Chicago market.

Gasoline trading was much more active in all markets along the Atlantic seaboard. Sellers in some instances reported doing the largest volume of business of any week this year. U. S. Motor was unchanged at 5.75 to 6 cents at New York harbor, the key market.

What looked to be a revival of foreign buying in the United States made its appearance last week. This was hailed as somewhat of an event by the New York trade. An English buyer purchased a cargo of refined gasoline —it was the first open market purchase in many months. An inquiry also was circulated among New York traders by a second buyer and a third foreign buyer was inquiring in the Mid-Continent for a cargo of stabilized natural gasoline.

Intercoastal trading was quiet. Atlantic seaboard buyers received firm offers of U. S. Motor gasoline at prices 0.125 cent lower in answer to inquiries to California sellers.

Wax markets were livelier. Small lot trading was considerably more active. An English broker who has been selling the market short for some time was expected to be in the market to cover on 3000 to 5000 tons of scale in the near future.

Downward Price Trend Halted in Chicago Market

Staff Special
CHICAGO, May 23

PROBABLY the outstanding feature of the Chicago market in the week ended May 23 was that there were no further recessions in tank car prices for gasoline. In fact, the tendency apparently was toward a higher market, although most sellers made on change in their prices. Reductions in the retail prices of their third-grade gasolines were made at several points by the major companies.

Gasoline demand was reported good most of the week, with the bulk of it moving against contracts. Inquiries were more numerous during the fore part of the week than later. Several carlot marketers reported receiving inquiries regarding gasoline for shipment over June. However, most of them said they were unwilling to quote a price for future shipment, as the market was too uncertain at present. The fact that a number of refineries had either closed down or were running at greatly reduced capacity was a contributing factor to this hesitancy to quote for deferred shipment.

The situation in regard to gasoline prices to jobbers was little changed from that prevailing at the end of the previous week. The bulk of sales of U. S. Motor were reported at 2.75 to 3.25 cents, with most traders asking 2.75 to 3 cents. Some sales were reported at under 2.75 cents, especially for shipment to Indiana and Michigan points. It was reported that an order for 1,000,000 gallons of U. S. Motor gasoline was placed by a Detroit buyer at a delivered price of 5.49 cents. Shipment was to be made from either an Ohio or Indiana refinery.

Several carlot marketers who had previously made sales at 2.625 cents advanced their prices to 2.75 cents, due to their inability to pick up any quantity of U. S. Motor at under 2.625 cents for resale. Some gasoline which did not come up to U. S. Motor specifications were reported available to 2.50 cents. Two refiners advanced their selling prices for U. S. Motor to 2.875 cents during the week. They had previously quoted 2.75 cents.

High gravity gasolines were inactive in most quarters. Sellers said that most jobbers were not willing to

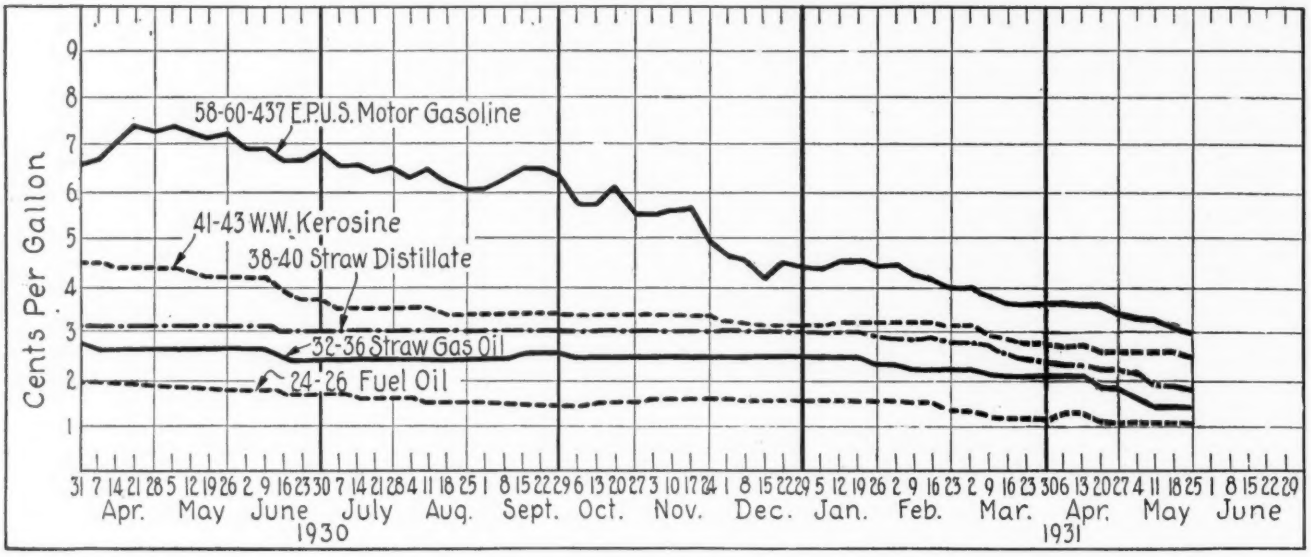
Summary of Group 3 Quotations for U. S. Motor Gasoline, 437 E.P.

In Effect May 25

Oklahoma	2.75 -3.25
Kansas	2.75 -3.125
North Texas	2.75 -3.125
West Texas	2.75 -3.125
Louisiana-Arkansas	2.875-3.25
Indiana-Illinois	2.875-3.25

Prices are those quoted on the basis of f.o.b. Group 3 by refiners in the districts designated.

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Straw Gas Oil
24-26 Fuel Oil
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1930
1931

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Table Section of this issue

pay a premium for these grades since the retail markets were low. Most sellers reported a good demand for anti-knock gasolines. Naphthas were fairly active and prices for the 437 e.p. grades were as high or higher than for much of the U. S. Motor moving.

Kerosines were quiet. Prices however were steady and apparently there was no great amount of "distress" kerosine being offered. Distillates were unchanged both in price and demand.

While the weather has been cool enough to cause a consistent demand for home burner grades of gas and fuel oils, there has been no great amount of tank car buying of these products. Prices of several grades showed further declines. Industrial buyers remained inactive.

East Texas Crude Prices Cut

HOUSTON—On May 26 Humble Oil & Refining Co. reduced prices for East Texas crude in amounts ranging from 18 to 30 cents. It also revised its gravity schedule, making its minimum grade below 35 gravity, at 25 cents. Next grade of 35-35.9 gravity is 27 cents, with a 2 cent differential for each succeeding degree of gravity, up to top grade of 40 and above, which is 37 cents.

Meeting the Humble cut on May 26 were The Texas Co. and Gulf Production Co.

S. O. of Kansas Will Enter Retail Field

TULSA, May 23.—Modification of a court order entered 10 years ago permits the Standard Oil Co. of Kansas to enter the retail field. Limited ouster proceedings in 1921 resulted in the order confining the company to the manufacturing business. The company, in its application for modification, asserted that it intends to sell direct to consumers. It entered the pipeline business two years ago and controls the Tulsa Co. a small producing company, in Oklahoma.

RICHMOND, Va.—H. L. Finlayson, Sr., of the National Oil Co. here, died May 20.

One of the few oil products to show a gain in exports in 1930 was petrolatum. Over 11,000,000 pounds were exported, compared with 7,075,000 pounds in 1929, and 6,405,000 pounds in 1928.

The United States imported 16,800,000 barrels less crude oil in 1930 than in 1929. Its imports in 1930 were 62,130,000 barrels, compared with imports of 79,000,000 barrels in 1929 and 80,000,000 barrels in 1928.

Shipments From Southern California

LOS ANGELES, May 21.—Shipments of bulk petroleum from southern California ports to Foreign and Atlantic Seaboard ports totaled 918,111 barrels, for week ended May 16 as compared with a total of 962,283 barrels shipped to the same ports a week ago. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Fuel	Total
Pacific For.	60,134	49,637	77,695	241,193	478,659
Atlantic Dom.	.....	439,452	.....	.....	439,452
Atlantic For	.....	.....	NONE	.....	.....

Prices 10 Years Ago
May 23, 1921

	Oklahoma	Penna.
58-60 U. S. Motor	13.00-13.50	19.00-19.50
80-84 Natural	8.00-8.50	.....
Kerosine (41-43 Okla.; 47 w. w. Pa.)	3.00-3.25	7.00-7.50
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$0.55-$0.60	4.00-4.50
Crude	$1.50	$3.25
Chicago tank wagon (no state tax)		20.00c

Prices A Year Ago
May 26, 1930

	Oklahoma	Penna.
58-60 U. S. Motor	7.1875	8.25-8.50
Grade A Natural	6.375	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)	4.00-4.25	5.75-6.25
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.70-$0.80	4.00-4.25
Crude (Okla. 35-35.9)	$1.255	$2.50
Chicago tank wagon (including 3c tax)		18.00c

Mid-Continent Refinery Markets

Gasoline Prices 0.125 to 0.25 Cent Lower

Staff Special
TULSA, May 23

THE Mid-Continent gasoline market drifted to slightly lower levels in the week of May 18 to 23 as several refiners vied for what little spot business existed. All grades of refined gasolines moved down from 0.125 to 0.25 cent a gallon.

Market prices continued to be established by the relatively few refiners who have a small number of contracts, and who must keep their production moving in the open market. Refiners who several months ago booked as many contracts as possible, were virtually out of the spot market picture, despite the fact that the prices they were receiving for their products were set by the other group of refiners.

Low gravity gasolines received the largest play in the spot market. The higher gravity oils have been virtually out of the picture since the third grade of gasoline was introduced.

Refiners who make naphthas reported demand had been exceptionally good virtually all week. One refiner who had a quantity of naphtha in storage reported that he had cleaned out that oil and was selling his production daily without any difficulty.

Reports continued to be received in Tulsa of gasoline being quoted at 2.50 cents to jobbers, but a check almost invariably revealed the gasoline as not being up to specifications for shipment to those states requiring U. S. Motor gasoline specifications.

Refiners in all districts reported shipments held up comparatively well throughout the week, despite the fact that the bulk of gasoline moved against contracts.

A reduction in U. S. Motor price was made in Arkansas late in the week when one refiner reported accepting some business at 3.25 cents. Louisiana refiners continued to ask 3.50 cents a gallon for gasoline to be shipped to differential points.

Natural gasolines were relatively quiet as the natural gasoline association held its convention here. Prices remained unchanged most of the week but received some stimulation May 22 when a sizable inquiry for a stabilized product was received.

This inquiry was for 150 to 225 cars of a 15-pound vapor pressure product, and was to be at a Gulf port within 30 days. One large manufacturer was understood to have quoted ¼ cents a gallon, delivered, for the order. It was not revealed prior to close of business May 23 who had received the business.

Manufacturers reported demand for naturals was good from their regular accounts. More inquiries were received also for a more stable product than the ordinary grade AA. Many jobbers have found that the relatively higher price charged for the stabilized product is not sufficiently large to offset the advantages obtained in making a better blended product.

One large refiner who has a sizable natural gasoline division has been stabilizing some of his grade AA and shipping it direct to division points, and shipping the naphtha from the refinery, then making the blend at the division points. In this way he has found he could save more on freight than he lost in stabilizing the material.

Kerosine demand was brisk in Kansas although not sufficiently good to cause prices to advance. Demand in Oklahoma and Texas was only fair, while in Louisiana and Arkansas refiners said they were pushed to keep up with commitments.

Distillates were virtually out of the picture under that name. Reports were current, however, that refiners in some instances had shipped distillate on gas oil orders in order to reduce stocks.

Gas oils continued to move downward in price with demand light in all districts. There was little differential between the low cold test and the ordinary grades. Considerable gas oil was moved from the Oklahoma City refining district, and many refiners were forced to meet this competition in order to obtain any business.

Fuel oil prices lost considerable ground. Refiners reported demand was exceptionally light and competition from east Texas was beginning to be felt. Warmer weather has swung some of the demand to the higher cold test oils.

Quotations for 150-160 D. bright stock of low cold test moved down to 13 cents in the course of the week as competition continued to be extremely brisk for what business there was. The price for this grade of oil was governed somewhat by quotations for the higher cold test oils, refiners making the low cold test material apparently being willing to meet competition rather than acquire any stocks at the present time.

No changes were noted in prices for neutral oils or wax.

Gasoline "Tax Racketeering" Hit by Texas Legislature

HOUSTON, May 23

PASSAGE by the legislature of a bill more clearly defining gasoline and placing responsibility for motor fuel taxes on the refiner, or avenue of first distribution, is acclaimed by the Texas Petroleum Marketers Association as a step calculated to eliminate so-called "gasoline tax racketeering."

George H. Sheppard, state comptroller, has said Texas has been losing $2,000,000 a year through gasoline tax evasions. The association has found that in most instances of unreasonable price-cutting the undersellers were tax evaders or they were selling non-taxable gasoline substitutes.

For several years, the majority of the Texas oil companies have endeavored to have gasoline so defined in the law as to prevent sale of non-taxable substitutes that are practically and commercially useable in motor vehicles. Different meetings were held with oil technicians to frame such definition. This year the legislature was convinced that the following definition is proper:

"Gasoline as used herein shall include any derivative of petroleum, or any other inflammable liquid that will flash at 110 F., or less, in the official closed testing cup method of the United States Bureau of Mines; and, provided, further that any other product which may be ordinarily, practically and commercially useable in internal combustion engines, used for the generation of power in propelling a motor vehicle over the highways of this state, shall be included in such definition."

Placing of the gasoline tax of four cents on the refiner, or the one making first distribution, has been long favored by the comptroller as an enforcement channel. Instead of checking the transactions of several thousand distributors, investigators will be required to check only about 90 refineries.

No change was made in the old law relative to permits, bonds, manner of keeping records and penalties for violation. It is the view of many oil officials, and the Texas Petroleum Marketers Association, which supported the amendment, that the new law will tend to stabilize the state's marketing industry.

Chicago Tank Car Market

CHICAGO, May 23

THE Chicago market generally was quiet last week. There was little change in tank car prices. Occasional sales of U. S. Motor were reported at 2.625 cents, but most sellers were getting at least 2.75 cents for full specification gasoline. Gasoline demand was good in most quarters, especially from contract jobbers. Naphthas were fairly active. Kerosine, distillate, gas and fuel oils were not much changed over the week.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Louisiana, Arkansas, Indiana, Illinois, Kentucky, etc.

	Prices May 25	Prices May 18	Prices May 11
50-52, 437 e.p. naphtha	2.875– 3.00	2.875– 3.00	3.00 – 3.125
58-60 U. S. Motor, 437 e.p.	2.75 – 3.25	2.75 – 3.25	2.875– 3.375
†56-62 400-437 e.p. anti-knock gasoline	3.125– 4.00	3.125– 4.00	3.375– 4.25
60-62 437 e.p. gasoline	2.875– 3.375	2.875– 3.375	3.00 – 3.375
60-62 400 e.p. gasoline	3.00 – 3.50	3.00 – 3.50	3.125– 3.50
64-66 375 e.p. gasoline	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
68-70 350-360 e.p. gasoline	3.75 – 4.00	3.75 – 4.00	3.875– 4.25
*Domestic Aviation Gasoline	5.25 – 5.50	5.25 – 5.75	5.25 – 5.75
41-43 w.w. kerosine	2.375– 2.625	2.375– 2.625	2.375– 2.75
42-44 w.w. kerosine	2.50 – 2.75	2.50 – 2.875	2.625– 2.875
38-40 p. w. distillate	1.75 – 1.875	1.75 – 2.00	1.875– 2.125
38-40 straw distillate	1.625– 1.875	1.625– 1.875	1.75 – 2.00
32-36 ordinary dark gas oil	0.75 – 1.125	0.875– 1.125	1.00 – 1.25
32-36 dark zero gas oil	1.375– 1.50	1.375– 1.625	1.50 – 1.75
32-36 straw zero gas oil	1.375– 1.625	1.50 – 1.75	1.625– 1.875
28-30 zero fuel oil (per bbl.)	$0.60 –$0.675	$0.60 –$0.675	$0.65 –$0.70
28-30 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.65 –$0.675
24-26 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.45 –$0.50
18-22 fuel oil, low sulfur (per bbl.)	$0.325–$0.35	$0.35 –$0.375	$0.35 –$0.40
18-22 fuel oil, high sulfur zero (per bbl.)	$0.325–$0.375	$0.35 –$0.375	$0.35 –$0.40
14-16 fuel oil (per bbl.)	$0.30 –$0.35	$0.30 –$0.35	$0.325–$0.35

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

Steamship Co. Defends Vacuum Oil Rates

WASHINGTON, May 25.—In answer to the complaint of the Atlantic Refining Co. asking for an award of reparation amounting to $36,617.17 on account of alleged discriminatory ocean freight rates on petroleum products to Cape Town and other South African ports, the Ellermen & Bucknell Steamship Co. Ltd. has told the Shipping Board that the differential rates given the Vacuum Oil Co. and its subsidiary were just and reasonable on account of the difference in conditions of shipment. It is assumed that other steamship lines will make a like answer.

The Ellermen & Bucknell defendant points out that under the Vacuum contract the shipper was obliged to deliver the lading alongside the vessel at her regular berth in New York free of charge to the ship. It points out that such lighterage alone warrants a difference of three cents in the rates, three cents being the lighterage charge.

Another distinction between the shipments in favor of the Vacuum was that the Vacuum shipments were taken aboard while the ship was taking general cargo at New York while under the Atlantic Refining Co. contract the ship had to go to Philadelphia, at an added cost of $2100. In addition it is declared that had not the Atlantic contracted to pay an increase over the New York rate the ships would not have called at Philadelphia, that port not being a point of call for ships outbound to African ports.

Further it is declared that under the Vacuum contract the shipper was obligated to furnish at least 150,000 cases of oil per month while under the Atlantic contract the shipper was not bound to furnish a minimum and might be called on to carry more than 225,000 cases, the maximum provided in the Vacuum contract. The differential was more than justified solely by the increased cost of having the ships call at Philadelphia declares the answer. The preference, it asserts was not therefore undue or unreasonable.

McKee Contracts to Expand Italian Refinery

CLEVELAND, May 23.—Arthur G. McKee & Co., engineers and contractors, have received a contract from Distillazione Italiana Combustibles, S. A. Venice, Italy, for process petroleum refining equipment. The equipment will be designed to increase the efficiency and capacity of existing petroleum refinery process units. This is the second contract placed by the company with McKee in the past three months.

The McKee company announces the appointment of Gray I. Morriss as sales engineer, with headquarters at the eastern office of the company at 120 Broadway, New York.

Mr. Morriss was formerly with the American Radiator Co. More recently, he was in charge of the New York office of the Kerotest Mfg. Co.

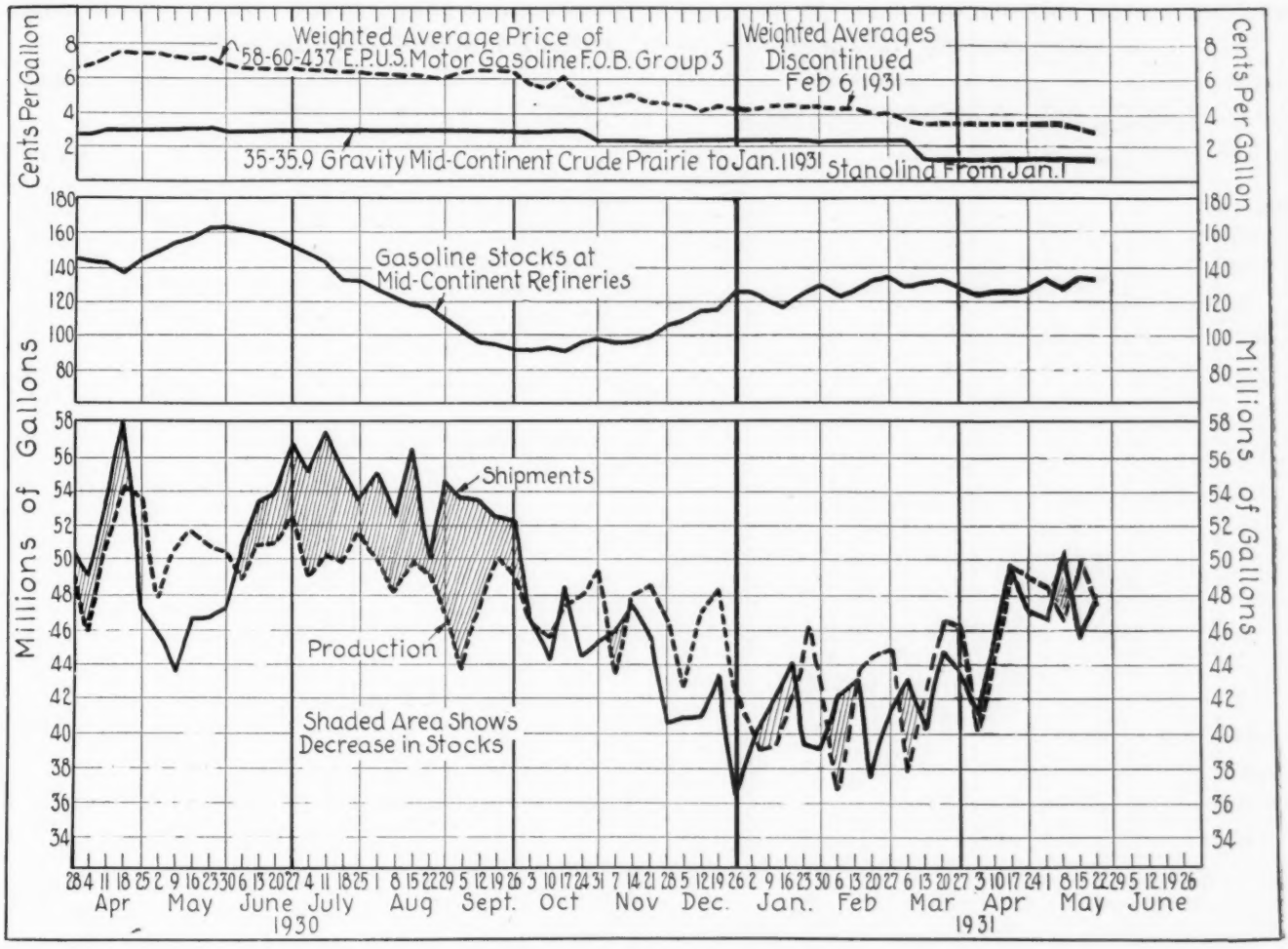
Oklahoma Marketers Meet To Discuss New Law

TULSA, May 23.—A meeting of Oklahoma marketers will be held at Oklahoma City, Friday, June 5, for the purpose of discussing the new tax evasion law which goes into effect July 11. The meeting will be open to all marketers, and is sponsored by the Oklahoma Petroleum Marketers' Association.

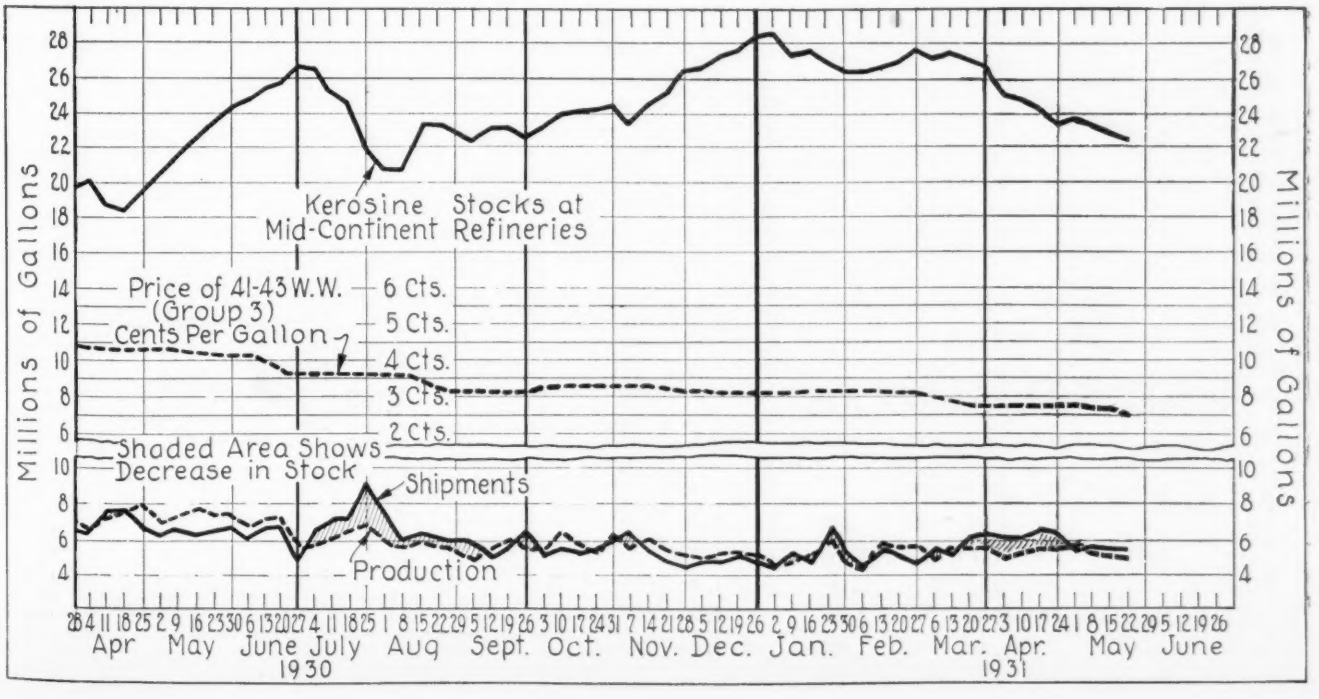
Members of the state tax commission will present the various phases of the new law and outline the commission's method of handling it. A general discussion also will be held with reference to tax evasion. The meeting is scheduled to start at 9 a.m. and probably will be held at the Huckins hotel.

Barometer of Mid-Continent Refinery Market—Week Ending May 22

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437 E.P.U.S. Motor Gasoline F.O.B. Group 3
Weighted Averages Discontinued Feb 6 1931
35-35.9 Gravity Mid-Continent Crude Prairie to Jan. 11931
Stanolind From Jan. 1
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr May June July Aug Sept. Oct Nov Dec. Jan. Feb Mar Apr May June
1930
1931

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 98



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 25	Prices May 18	Prices May 11
48-50 450 e.p. naphtha...	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
50-52 450 e.p. naphtha...	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
56-58 450 e.p. gasoline...	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
58-60 450 e.p. gasoline...	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
58-60 U.S. Motor 437 e.p.	2.75 – 3.25	2.875– 3.25	3.00 – 3.50
60-62 437 e.p. gasoline...	2.75 – 3.25	3.00 – 3.375	3.00 – 3.50
60-62 400 e.p. gasoline...	3.00 – 3.50	3.125– 3.50	3.125– 3.625
64-66 390 e.p. gasoline...	3.375– 3.625	3.50 – 3.75	3.50 – 3.75
64-66 375 e.p. gasoline...	3.50 – 3.875	3.625– 4.00	3.75 – 4.00
68-70 350-360 e.p. gasoline	3.875– 4.125	3.875– 4.125	4.00 – 4.25
‡Domestic Aviation Gasoline.....	5.00 – 5.25	5.00 – 5.25	5.25 – 5.75

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	5.00	5.00 – 5.25	5.00 – 5.25
54-56 Naphtha.....	5.00	5.00 – 5.25	5.00 – 5.25
58-60 U.S. Motor 437 e.p.	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
60-62 400-410 e.p. gasoline	5.125– 5.375	5.125– 5.50	5.125– 5.50
64-66 390 e.p. gasoline...	5.25 – 5.50	5.375– 5.75	5.50 – 5.75
68-70 350-360 e.p.....	6.00 – 6.25	6.00 – 6.50	6.125– 6.50

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	8.00	8.00	8.00

KANSAS (F. o. b. refinery Kansas destination)

58-60 U.S. Motor 437 e.p.	3.375– 3.625	3.50 – 3.75	3.50 – 3.75
60-62 437 e.p. gasoline...	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
60-62 400 e.p. gasoline...	3.625– 3.875	3.625– 3.875	3.625– 3.875
64-66 375 e.p. gasoline...	4.00 – 4.25	4.00 – 4.25	4.00 – 4.50

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline...	2.625	2.625	2.625
58-60 450 e.p. gasoline...	2.625	2.625	2.625
58-60 U.S. Motor 437 e.p.	2.75 – 3.125	2.875– 3.125	2.875– 3.125
60-62 400 e.p. gasoline...	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
64-66 390 e.p. gasoline...	3.375– 3.625	3.375– 3.625	3.375– 3.625
64-66 375 e.p. gasoline...	3.50 – 3.75	3.75	3.75
68-70 350-360 e.p. gasoline	3.875– 4.00	4.00	4.00

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	2.50	2.50	2.50
58-60 437 e.p. gasoline...	2.625	2.625	2.625
58-60 U.S. Motor 437 e.p.	2.75 – 3.125	2.875– 3.125	2.875– 3.125

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p.	3.50	3.50	3.75

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	3.25 – 3.50	3.50	3.75

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	3.25 – 3.50	3.00 – 3.75	3.00 – 3.50
54-58 U.S. Motor, for outside state shipment....	3.25 – 3.75	3.25 – 4.00	3.125– 3.50
58-61 375-400 e.p. gasoline	3.75 – 4.75	3.75 – 4.75	4.00 – 5.00
42-45 Engine Distillate 445-480 e.p.....	3.00 – 3.50	3.00 – 3.50	3.00 – 3.50

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	1.625– 1.75	**1.50 –1.625	1.50
Grade A, 72-79.9, 90% Recovery.....	1.875– 2.00	1.875 –2.00	1.75
Grade BB, 84-92, 85% Recovery.....	1.50	1.50	1.375
Grade B, 76-83.9, 85% Recovery.....	1.50	1.50	1.375
Grade C, 80-92, 78% Recovery.....	1.50	1.50	1.375

†Prices nominal ††Only one refiner quoting *Quotations only

NORTH TEXAS (F. o. b. Breckenridge)

	Prices May 25	Prices May 18	Prices May 11
Grade AA, 80-87.9, 90% Recovery.....	1.625– 1.75	**1.50 – 1.625	1.50
Grade A, 72-79.9, 90% Recovery.....	1.875– 2.00	1.875– 2.00	1.75
Grade BB, 84-92, 85% Recovery.....	1.50	1.50	1.375
Grade B, 76-83.9, 85% Recovery.....	1.50	1.50	1.375
Grade C, 80-92, 78% Recovery.....	1.50	1.50	1.375

NORTH LOUISIANA (F. o. b. Monroe District)

Grade AA.....	†1.875	†1.875	†1.75
Grade BB.....	†1.625	†1.625	†1.625
Grade C.....	†1.625	†1.625	†1.625

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	2.25 – 2.75	2.50 – 3.00	2.75 – 3.25

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosine.....	4.00 – 4.25	4.125– 4.375	4.25 – 4.375
46 w.w. kerosine.....	4.25 – 4.50	4.25 – 4.50	4.375– 4.625
47 w.w. kerosine.....	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosine.....	2.375– 2.625	2.50 – 2.75	2.50 – 2.75
42-44 w.w. kerosine.....	2.50 – 2.75	2.625– 2.875	2.625– 2.875

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosine.....	2.875– 3.125	2.875– 3.125	2.875– 3.125
42-44 w.w. kerosine.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosine.....	2.25 – 2.375	2.25 – 2.375	2.375
41-43 w.w. kerosine.....	2.375– 2.625	2.375– 2.625	2.50 – 2.625

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosine.....	3.00 – 3.25	3.25 – 3.50	3.25 – 3.50

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w.w. kerosine.....	3.00 – 3.25	3.25 – 3.50	3.25 – 3.50

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosine.....	3.75 – 4.50	4.00 – 4.75	4.00 – 5.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.	(Viscosity at 70° F.)		
200 No. 3 color, 420-425 flash.....	21.00 –21.50	21.00 –21.50	21.50 –22.00
180 No. 3 color, 410-415 flash.....	18.00 –19.00	18.00 –19.00	18.50 –19.00
150 No. 3 color, 400-405 flash.....	15.75 –16.00	16.00 –17.00	16.00 –17.00

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 2.....	5.25	5.25	5.25
150—No. 3.....	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
150—No. 4.....	6.50	6.50	6.50
180—No. 3.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 4.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
180—No. 5.....	7.50	7.50	7.50
200—No. 3.....	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
200—No. 4.....	8.50	8.50	8.50
200—No. 5.....	8.25	8.25	8.25
220—No. 3.....	10.00	10.00	10.00
220—No. 4.....	9.50	9.50	9.50
220—No. 5.....	9.00	9.00	9.00
240—No. 3.....	11.00	11.00	11.00
240—No. 4.....	10.00	10.00	10.00
240—No. 5.....	9.50	9.50	9.50
280—No. 3.....	12.50	12.50	12.50
280—No. 4.....	11.50	11.50	11.50
280—No. 5.....	11.00	11.00	11.00

Note: Quotations for 0 to 10 cold test neutral oils are 1 to 2 cents higher depending on the grade.

****Prices represent Quotations and Sales.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices May 25 (Viscosity at 100° F., pour test 0)	Prices May 18	Prices May 11
100—No. 2 Pale	5.00 – 5.75	5.00 – 5.75	5.00 – 5.75
200—No. 3 Pale	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
300—No. 3 Pale	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500—No. 3½ Pale	9.50 –10.00	9.50 –10.00	9.50 –10.00
750—No. 4 Pale	11.00 –11.50	11.00 –11.50	11.00 –11.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4-5 Pale	15.00 –15.50	15.00 –15.50	15.00 –15.50
200—No. 5½ Red Oil	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
300—No. 5½ Red Oil	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
500—No. 6 Red Oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
750—No. 6 Red Oil	10.50 –11.00	10.50 –11.00	10.50 –11.00
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	14.50 –15.00	14.50 –15.00	14.50 –15.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	7.00	7.00	7.00
200—No. 3	10.00	10.00	10.00
300—No. 3	10.50	10.50	10.50
450—No. 3	12.50	12.50	12.50
550—No. 3	13.50	13.50	13.50
600—No. 3	13.50	13.50	13.50
200—No. 5	10.00	10.00	10.00
300—No. 5	10.50	10.50	10.50
400—No. 5	12.00	12.00	12.00
500—No. 5	13.00	13.00	13.00
600—No. 5	13.50	13.50	13.50
700—No. 7	15.50	15.50	15.50

‡Above prices in effect since April 1.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Cylinder stock prices represent quotations and sales to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	18.00	18.00	18.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	13.00 –15.00	13.50 –15.00	13.50 –15.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	13.00 –14.50	13.50 –14.50	13.50 –14.50
150-160 Vis. D Brt. Stock, 25-40 cold test	13.00 –14.00	13.50 –14.00	13.50 –14.00
150-160 Vis. E 210° Brt. St.	13.00 –14.00	13.00 –14.00	13.00 –14.00
600 St. Ref. Olive Green	6.00 – 7.50	6.00 – 7.50	6.00 – 7.50
600 St. Ref. Dark Green	4.50 – 5.50	4.50 – 5.50	4.50 – 5.50
Black Oil	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	7.75 – 8.00	7.75 – 8.00	7.75 – 8.25
650 Steam Refined	10.75 –11.25	10.75 –11.25	10.75 –11.25
600 Flash	11.50 –12.50	11.75 –12.50	11.75 –12.50
630 Flash	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 Warren E	11.75 –12.00	11.75 –12.25	11.75 –12.25
Cold Test Stocks, 140-150 vis. at 210°, 540-550 flash, No. 8 color, 20 pour test and below	17.00 –17.50	17.50 –18.00	17.50 –18.00
No. 8 color, 25 and 35 pour test	17.00 –17.50	17.00 –17.50	17.00 –17.50
No. 8 color, 40 pour test and above	16.75 –17.00	17.00 –17.50	17.00 –17.50

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.00 – 2.125	2.125	2.125
124-126 white crude scale, a.m.p.	2.00 – 2.125	2.125	2.125

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	1.75 – 2.00	1.75 – 2.00	1.875– 2.00

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	2.50 – 2.75	2.75 – 2.875	2.75 – 2.875
30-34 fuel oil	2.50 – 2.75	2.75 – 2.875	2.75 – 2.875
28-32 fuel oil	2.50 – 2.75	2.75 – 2.875	2.75 – 2.875

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 25	Prices May 18	Prices May 11
38-40 straw distillate	1.75 – 2.00	1.75 – 2.125	1.75 – 2.125
36-38 straw distillate	1.625– 1.875	1.625– 1.875	1.625– 1.875
32-36 straw gas oil	1.25 – 1.50	1.25 – 1.50	1.375– 1.50
32-36 straw gas oil zero	1.50 – 1.75	1.625– 1.875	1.625– 1.875
32-36 dark gas oil	1.00 – 1.375	1.00 – 1.375	1.00 – 1.375
32-36 dark gas oil zero	1.50 – 1.75	1.50 – 1.75	1.625– 1.75
28-30 zero fuel oil(per bbl.)	$0.625–$0.675	$0.65 –$0.70	$0.675–$0.70
28-30 fuel oil (per bbl.)	$0.60 –$0.65	$0.625–$0.675	$0.625–$0.675
26-28 fuel oil (per bbl.)	$0.475–$0.525	$0.525–$0.575	$0.575–$0.625
24-26 fuel oil (per bbl.)	$0.45 –$0.50	$0.45 –$0.50	$0.475–$0.525
22-26 fuel oil (per bbl.)	$0.425–$0.475	$0.45 –$0.50	$0.45 –$0.50
18-22 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.375–$0.425
16-20 fuel oil (per bbl.)	$0.325–$0.375	$0.35 –$0.40	$0.375–$0.40
14-16 fuel oil (per bbl.)	$0.275–$0.325	$0.325–$0.35	$0.35 –$0.375

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
36-38 straw distillate	2.125– 2.25	2.125– 2.25	2.125– 2.25
32-36 straw gas oil	2.00 – 2.25	2.00 – 2.25	2.00 – 2.25
18-22 fuel oil (per bbl.)	$0.475–$0.575	$0.475–$0.575	$0.475–$0.575
10-14 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.40 –$0.45

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	1.75 – 2.00	1.75 – 2.00	1.75 – 2.00
38-40 p.w.treated distillate	1.875– 2.125	1.875– 2.125	2.00 – 2.25
32-36 gas oil, cracked	1.00 – 1.375	1.25 – 1.50	1.375– 1.625
32-36 St. reduced gas oil	0.875– 1.25	1.00 – 1.375	1.00 – 1.375
24-26 fuel oil (per bbl.)	$0.375–$0.425	$0.375–$0.425	$0.375–$0.425
20-24 fuel oil (per bbl.)	$0.325–$0.375	$0.325–$0.375	$0.325–$0.375
18-22 fuel oil (per bbl.)	$0.30 –$0.35	$0.30 –$0.35	$0.30 –$0.35

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment.

34-38 gas oil	1.625– 1.75	1.625– 1.75	1.625– 1.75
30-32 gas oil	1.00 – 1.25	1.00 – 1.25	1.00 – 1.25
28-30 zero gas oil	1.375– 1.625	1.375– 1.625	1.50 – 1.75
18-22 fuel oil (per bbl.)	$0.375–$0.40	$0.375–$0.40	$0.375–$0.40

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	2.00 – 2.25	2.25 – 2.50	2.25 – 2.50
32-36 gas oil, straw	2.00 – 2.25	2.25 – 2.50	2.25 – 2.50
14-16 fuel oil (per bbl.)	$0.55 –$0.65	$0.55 –$0.65	$0.55 –$0.65

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	2.00 – 2.25	2.25 – 2.375	2.25 – 2.375
32-36 dark gas oil	2.00 – 2.25	2.25 – 2.375	2.25 – 2.375
28-30 gas oil	2.00 – 2.125	2.125– 2.25	2.125– 2.25
20-24 fuel oil (per bbl.)	$0.75	$0.75	$0.75
9-12 fuel oil (per bbl.)	$0.525–$0.575	$0.525–$0.575	$0.525–$0.575
Black oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.45 –$0.55	$0.45 –$0.55	$0.40 –$0.50
14-18 Bunker oil (per bbl.)	$0.55 –$0.80	$0.55 –$0.80	$0.55 –$0.80
30-34 gas oil (per bbl.)	$0.70 –$0.85	$0.70 –$0.85	$0.65 –$0.80
27 Plus Diesel oil (per bbl.)	$0.70 –$0.85	$0.65 –$0.80	$0.65 –$0.80

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. Penna. refinery. In tank cars ⅛c to ¾c per pound less.) Two refiners quoting.

Snow White	6.50 – 7.25	6.50 – 7.25	6.50 – 7.25
Lily White	5.125– 6.00	5.125– 6.00	5.125– 6.00
Cream White	4.125– 5.00	4.125– 5.00	4.125– 5.00
Light Amber	2.625– 3.00	2.625– 3.00	2.625– 3.00
Amber	2.375– 2.75	2.375– 2.75	2.375– 2.75
Red	1.875– 2.50	1.875– 2.50	1.875– 2.50

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

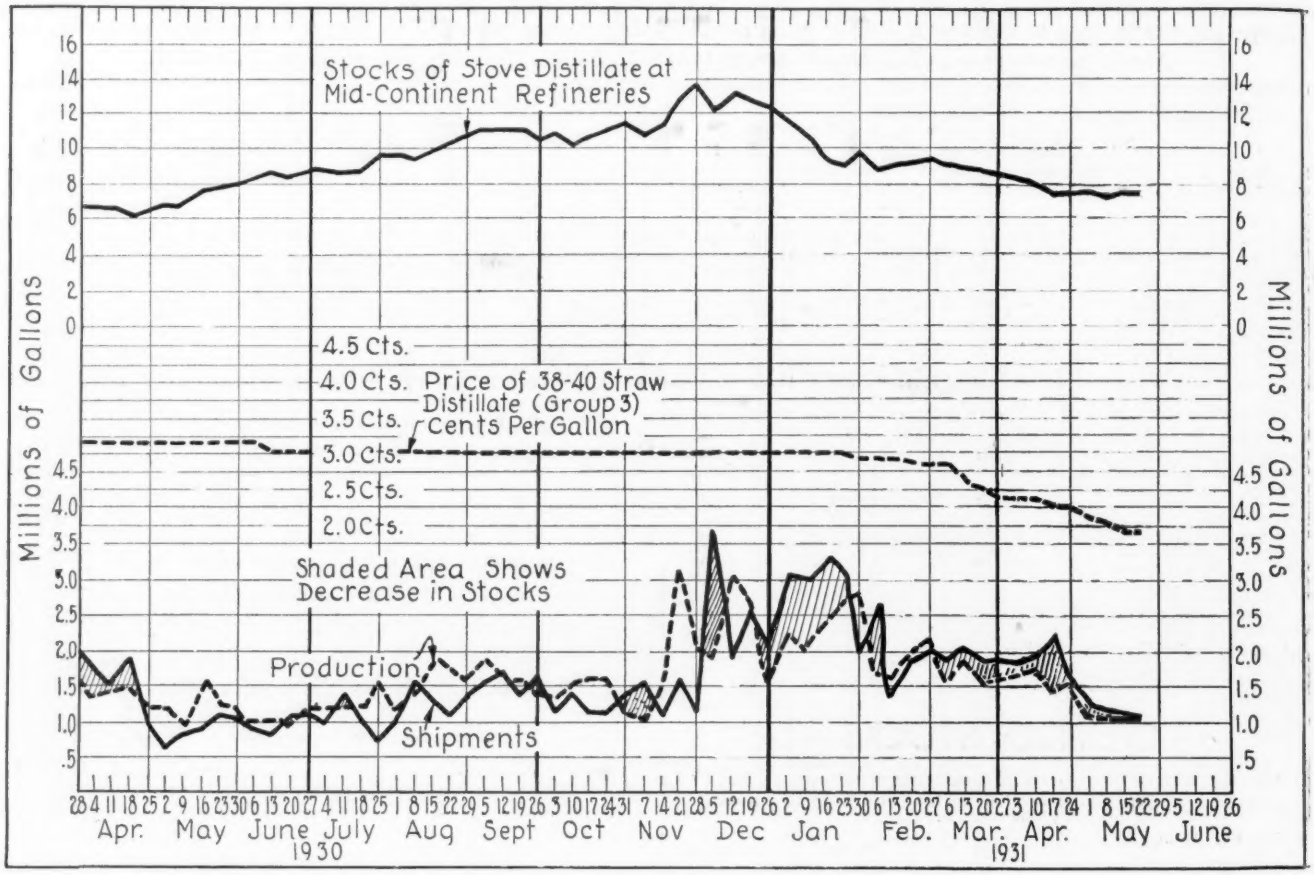
(Per ton in car lots)

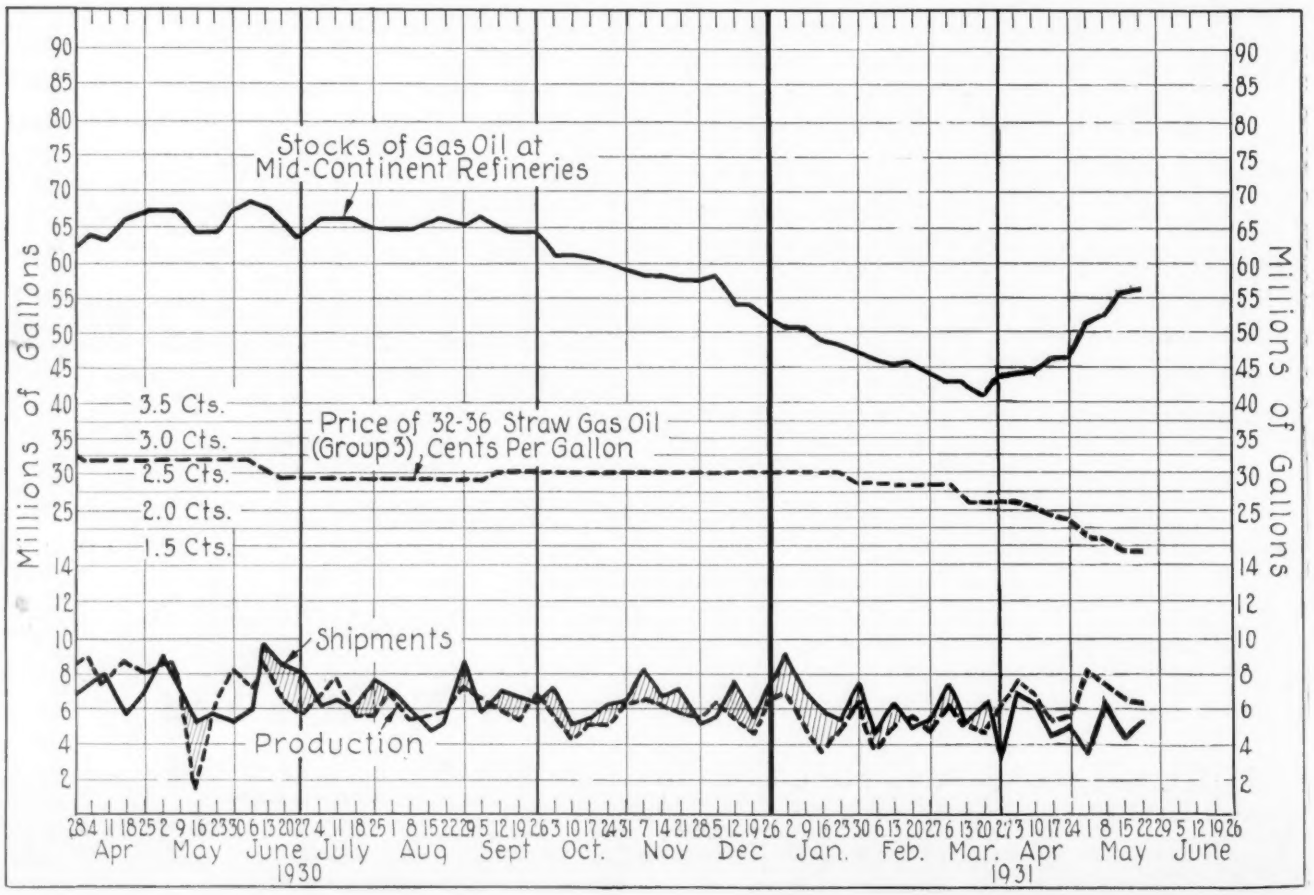
Lump	$3.00	$3.00	$4.50 –$5.00
Still run	$2.00	$2.00	$3.00
Breeze	$1.25	$1.25	$2.00

****Prices represent Quotations and Sales**

Barometer of Mid-Continent Refinery Market—Week Ending May 22

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
4.5 Cts.
4.0 Cts. Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
2.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Millions of Gallons
Apr. May June July Aug Sept Oct Nov Dec Jan Feb. Mar. Apr. May June
1930
1931



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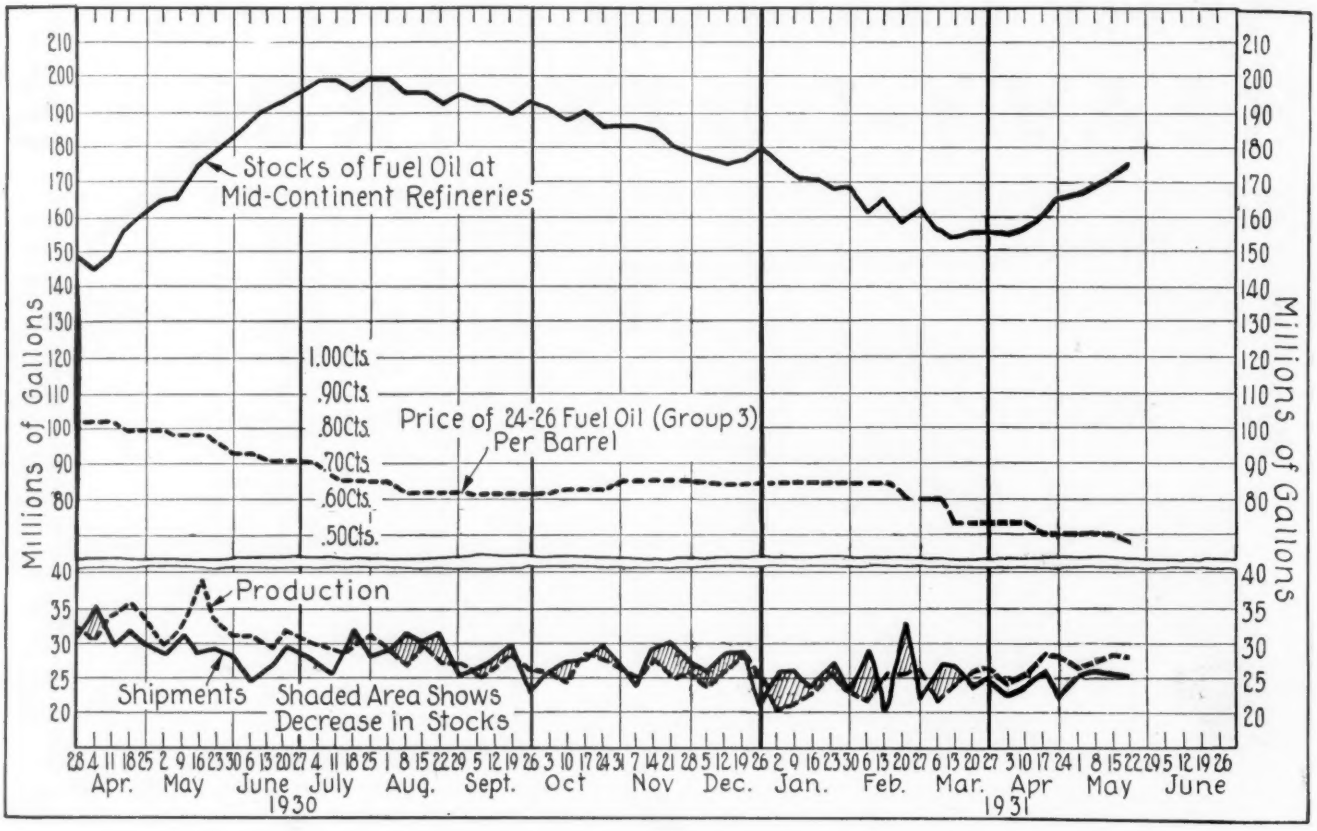
Barometer of Mid-Continent Refinery Market—Week Ending May 22

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Domestic Buying Active; Export Trading Quiet

LOS ANGELES, May 25

ALTHOUGH Pacific coast export markets continued their featureless trend during week ended May 23, a brisk tank car movement was reported in the domestic gasoline market.

In view of the lack of actual spot sales in the local cargo market, exporters were able to give only nominal quotations as indicative of the probable range of prices. All of them felt the prices asked by local refiners were too high to permit actual business.

The increased demand for domestic gasoline was attributed to numerous reports to the effect that a substantial increase in the tank wagon price would be initiated over the week end. Quotations for delivery both in and out of the state ranged from 3.25 to 3.50 cents, with a few cars reported sold at 0.25 cent above and below this spread.

Official confirmation of the anticipated tank wagon advance could not be obtained and executives of several major companies indicated no move would be made to better price conditions for either crude oil or refined products until the west coast industry was in closer harmony on marketing policies, and particularly until some of the larger companies discontinued a practice of unloading gasoline at cut prices in competition to themselves and other major brands of gasoline.

Bids opened covering gasoline needs of the Pacific Coast Navy, revealed Shell Oil Co. was low on the two large lots. This company's quotation for 1,100,000 gallons, delivery at San Pedro, was 4.50 cents, and for 2,000,000 gallons, f.o.b. the naval supply depot, North Island, San Diego, in tank wagon lots, the price was 5.50 cents.

Standard of California was second low bidder on these two bids, with 6 cents for the San Diego delivery, and 4.95 cents for 400,000 gallons, and 5.75 cents for the remainder of the San Pedro consignment. These deliveries to be made in lots of 6500 gallons or more.

Retail gasoline prices in southern California averaged about 9 cents the past week, with nearly every major company meeting competitive prices. Generally, this policy applied only to prices posted at stations handling major products, and the competitive prices rarely ranged lower than 8.50 cents.

Natural gasoline demand fell off sharply with warmer weather and quotations ranged from 2.25 to 2.75 cents. Stocks of this commodity were reported increasing and little hope could be seen of an advance in quotations. The above quotations were for spot tank car lots. There was some question as to the probable quotations for export.

A temporary advance was noted in fuel oil quotations as independent refiners reduced their crude runs. The price varied from $0.45 to $0.55 per barrel, with most quotations in the neighborhood of $0.50.

Pennsylvania Markets

Market Quiet

CLEVELAND, May 25.—The western Pennsylvania refinery market generally was quiet last week. A fair to good demand for gasoline was reported by most sellers but activity of other commodities diminished considerably.

Although no wide recessions in prices were noted, practically all commodities experienced slight reductions. Many of the recessions were from the tops of price ranges. On the lows of price ranges, 45 w.w. kerosine was down 0.125 cent; 40 pour test bright stock. 0.25 and 150 No. 3 color neutral, 0.25 cent.

In 1930 the United States exported 366,500 long tons of petroleum asphalt, compared with 428,050 long tons in 1929 and 440,000 tons in 1928.

The largest buyer of petroleum asphalt from the United States in 1930 was France, which took 40,560 long tons, compared with 32,000 long tons in 1929 and 27,180 tons in 1928.

The smallest customers for United States petroleum asphalts in 1930 were the French West Indies, the Belgian Congo and Egypt, each of which took one long ton.

NEW EQUIPMENT

The operating assets of the St. Louis Pump & Equipment Co. have been purchased by the St. Louis Meter & Pump Co., giving Cole Fredericks, pioneer pump builder, control of the company he founded in 1919.

The St. Louis Meter & Pump Co. is a Missouri corporation of which C. C. Fredericks, president, and Sherwood Hinds, P. C. Thomas, Roy F. Hall and George Yaeger constitute the board of directors.

In addition to the complete line of gasoline and oil handling equipment formerly manufactured by the St. Louis Pump & Equipment Co., the new company will manufacture gasoline and oil meters, special duty power pumps and liquid handling systems for industrial use and oil marketing devices.

The office and plant will remain at the old address at 3701 Forest Park Blvd., St. Louis, Mo., until September, by which time the new factory and office building are expected to be ready.

* * *

Battenfeld Grease & Oil Corp., Kansas City, Mo., has just issued a revised booklet on greases. Proper greases for various lubrication points on automobiles are discussed. Industrial greases also are covered.

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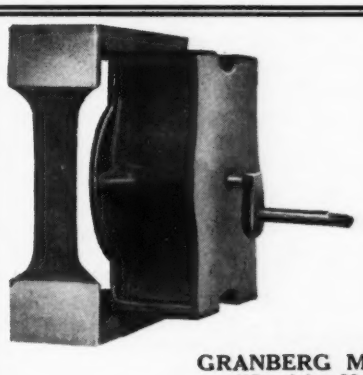

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NATIONAL PUMPS CORP., Dayton, Ohio, Manufacturers of Granberg Meter Equipped Retail Pumps

Eastern Domestic Markets

Gasoline Buying on Larger Scale

Staff Special
NEW YORK, May 23

GASOLINE buying on a larger scale featured the eastern seaboard markets during the week ended May 23. Jobbers with depleted storage were disposed to purchase at current price levels for future delivery. Generally speaking, prices were steady all along the coast and shading of posted prices was almost totally absent. Traders were encouraged by the improved demand.

Several marketers in New York reported that their largest sales of the year were made to the jobbing trade the past week. Good motoring weather stimulated consumption considerably, and many jobbers were in the market to replenish depleted storage.

The majority of tank car lots of U. S. Motor gasoline were purchased at 5.75 cents at New York, Philadelphia and Baltimore. This price was pretty well pegged at New York harbor throughout the week, although an occasional tank car was shipped on the basis of 5.50 cents f.o.b. terminal. In one or two instances differences in freight rates were absorbed by sellers giving a net back of slightly under 5.75 cents, but these were exceptional.

The majority of barge lots of gasoline sold along the middle Atlantic coast were either at 5.75 cents or 0.25 cent less depending on the size of the quantity. A few barge loads changed hands at 5.25 cents, but these sales were by far the exception.

New England gasoline markets were comparatively quiet at unchanged price levels. The majority of the spot business continued at posted prices of 6.50 cents, f.o.b. Portland, and 6.25 cents, f.o.b. Boston and Providence. The only reports of price cutting came from the tank wagon division of the market and these were said not to be distressing.

Demand for kerosine continued to decline. The posted price at New York harbor and points south was reduced 0.5 cent to 5.5 cents early in the week. A few sales at New York were made at 5 cents.

Gas oil, 28-34 gravity, was offered at 4 cents in the New York market. Occasional sales at 3.75 cents were reported. Furnace oil, 36-40 gravity, was available at 5 cents at New York harbor.

Gulf Coast Markets

English Buyer Takes Cargo of Gasoline

Staff Special
NEW YORK, May 23.

A LONG period of inactivity in bulk markets at the Gulf was broken the past week by the sale of a cargo of gasoline to an English buyer for June delivery. Details of the transaction were not obtainable but the fact that European buyers were again looking to this country for supplies was treated as somewhat of an event by the New York oil trade.

A second inquiry for a cargo of gasoline also was reported to have been entered in the American market by a European buyer the past week. In some quarters it was believed that buyers were merely feeling out the situation in this country, while in others the belief was expressed that an actual revival of foreign buying in this country was on the way.

The prices quoted by American refiners generally were steady. Brokers to whom the foreign inquiries were submitted reported they had found no disposition on the part of suppliers to shade the prices of 4.25 cents for U. S. Motor and 5 cents for 64-66, 375 end point gasoline which were established recently.

Activity of heavy oils continued generally quiet. Several domestic buyers were inquiring for cargoes of gas oil, and while firm offers were lacking, it was indicated that 2.50 cents a gallon could be done for either the 26-30 or the 30 plus translucent grade. Quotations ranged from this figure up to 2.875 cents a gallon, and these prices represent a decline of 0.375 cent.

Venezuela Crude

The market for Venezuela crude was quiet from the standpoint of actual trading. Cargo lots of this material were offered at $0.67, f.o.b. deepwater in the Lake Maracaibo region. This price is 3 cents lower than the last paid price.

Panuco Crude

The Panuco crude market also was quiet. On the basis of the last sale the market for this oil was unchanged at $0.45 per barrel, f.o.b. Tampico.

Gulf Lubes Dull

HOUSTON, May 23.—Dullness continued throughout the week in the Gulf Coastal lubricant markets. Price schedules were unchanged, but manufacturers were described as willing to shade quotations for quantity business and prompt movements.

Wax Markets

Scale Waxes Quoted Lower

NEW YORK, May 23.—Scale waxes were in moderate demand in both the New York and New Orleans markets the past week. Several sales were made at fractionally lower prices. One parcel of 75 tons of yellow crude scale was sold at 1.85 cents a pound, f.a.s. New York, and a smaller lot of white crude scale was sold at 1.90 cents a pound. Quotations for white crude scale ranged up to 2 cents a pound, although sellers generally reported very little business at this price.

Sellers of refined waxes quoted prices 0.125 cent lower for the 125-127 and 135-137 grades. Prices of other fully refined grades were unchanged.

Of considerable interest to American suppliers was the report the past week that a large English broker who has been selling short for some time will be compelled to cover in the near future. It was estimated that this buyer would be in the market for 3000 to 5000 tons of scale wax.

Wax Exports Down 30,000,000 Lbs.

Exports of paraffin wax from the United States in 1930 totaled 293,000,000 pounds, 210,000,000 pounds of which were refined wax, and 83,000,000 pounds unrefined.

This compares with 240,000,000 pounds of refined wax exported in 1929 and 310,000,000 pounds in 1928. In 1929, 80,222,000 pounds of unrefined wax was exported, and 93,100,000 pounds in 1928.

The United States exported 840,500 pounds of candles in 1930, compared with 1,066,500 pounds in 1929 and 1,032,000 pounds in 1928. The largest buyer was Canada, which took 590,000 pounds in 1930.

Imports of topped oils including fuel oils into the United States in 1930 totaled 26,080,000 barrels, compared with 20,545,500 barrels in 1929 and 7,270,000 barrels in 1928. The Netherland West Indies shipped 24,000,000 barrels of these oils to this country in 1930, compared with 18,400,000 barrels in 1929, and less than 3,000,000 barrels in 1928.

Oil Trademarks For Copyright

THE following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. trademark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

CRUM-BRAINARD CO., "OIL TOOLS THAT STAND ON THEIR OWN LEGS," and picture of man in armor and a shield. Ser. No. 309,726, Crum-Brainard Co., Ltd., Magnolia, Calif. For oil-well machinery and tools.

"U U U," in a circle. Ser. No. 296,-161. Vereinigte Stahlwerke Aktiengesellschaft, Dusseldorf, Germany. For oil pumps, etc.

"STRATCO." Ser. No. 306,073. Charles W. Stratford, doing business as Stratford Engineering Company, Kansas City, Mo. For petroleum refining equipment.

"GERMO." Ser. No. 310,104. Continental Oil Company, Ponca City, Okla. For lubricating oil.

"GERMOLIND." Ser. No. 310,107. Continental Oil Co., Ponca City, Okla. For lubricating oil.

"ESSOLENE." Ser. No. 312,274. Standard Oil Company of New Jersey, Wilmington, Del. For refined, semirefined, and unrefined oils made from petroleum both with and without admixture of animal, etc. substances for illumination, burning, power, fuel, and lubricating purposes and lubricating greases.

"ESSOLUBE." Ser. No. 312,671. Standard Oil Co. of New Jersey, Wilmington, Del. For refined, semirefined, and unrefined oils, lubricating greases, etc.

"ZERO FLO." Ser. No. 311,559. The Fred G. Clark Company, Cleveland, Ohio. For lubricating oils and greases.

"AUROWN." Ser. No. 311,833. Gash-Stull Co., Chester, Pa. For lubricating oils.

"SEPARAFINE." Ser. No. 311,605. Frank F. Gorman, doing business as Separafine Mfg. Co., Bristow, Okla. For chemical compositions for treating petroleum oils.

"AQUATRAP." Ser. No. 310,630. Aqua Systems, Inc., New York City. For tank traps used in connection with systems for storing, handling, and dispensing gasoline, oil, and similar products.

"CARBOLAC," in a circle. Ser. No. 302,210. R. L. Buffington, doing business as Carbonless Fuel Company, Columbus, Ohio. For gasoline containing a chemical preparation to lubricate the cylinder walls, piston rings, and valve stems of gasoline engines to loosen and dissolve the carbon deposit.

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FREEDOM offers you a 100% Pennsylvania motor oil that can be supplied to your trade with your own brand name.

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If you have your own specifications we'll make up (Sharples Process) a motor oil that exactly meets them. Or we'll be glad to recommend one of our own tested specifications.

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85/90 Viscosity Sharples Bright Stock
100% Pennsylvania Neutrals
600 Steam Refined
650 Steam Refined
600 Flash Steam Refined
630 Flash Steam Refined
Freedom Filtered Kerosene Oil

FREEDOM
100% PENNSYLVANIA OILS

FO-502

Complete Seaboard Market

(Export Markets for whole year given in OIL HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in Florida and South Carolina.)

	Prices May 25	Prices May 18	Prices May 11
U. S. MOTOR GASOLINE			
New York harbor	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Portland district	6.50	6.50	7.00
Boston district	6.25	6.25	6.75
Providence district	6.25	6.25	6.75
Philadelphia district	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Baltimore district	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Norfolk district	6.00	6.00	6.50
Charleston district	6.00	6.00	6.50
Savannah district	6.00	6.00	6.50
Jacksonville district	6.00	6.00	6.50
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Philadelphia district	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Baltimore district	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
‡DOMESTIC AVIATION GASOLINE			
New York harbor	9.50 –12.00	9.50 –12.00	10.00 –12.00
Philadelphia	9.50 –12.00	9.50 –12.00	10.00 –12.00
Baltimore	11.00 –12.00	11.00 –12.00	11.00 –12.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	5.00 – 5.50	5.25 – 5.50	5.75
Philadelphia district	5.25 – 5.50	5.25 – 5.50	6.00
Baltimore district	5.25 – 5.50	5.25 – 5.50	6.00
GAS OIL: 28-34 Gravity			
New York harbor	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
Boston district	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
FURNACE OIL: 36-40 Gravity			
New York harbor	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
Boston district	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$0.95	$0.95	$0.95
Boston district	$0.95	$0.95	$0.95
DIESEL OIL			
New York harbor	$1.65	$1.65	$1.65

†Nominal.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	May 25	May 18	May 11
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	24.00 –25.00	24.00 –25.00	24.00 –25.00
Bright stock, No. 6½ color diluted	23.00 –24.00	23.00 –24.00	23.00 –24.00
600 D filtered	22.00 –25.00	22.00 –25.00	22.00 –25.00
600 Warren E filtered	18.00 –21.00	18.00 –21.00	18.00 –21.00
600 stm. refd. unfiltered	14.50 –16.00	14.50 –16.00	14.50 –16.00
650 stm. refd. unfiltered	17.00 –20.00	17.00 –20.00	17.00 –20.00
600 flash steam refined	17.50 –20.00	17.50 –20.00	17.50 –20.00
630 flash, steam refined	23.00 –25.00	23.00 –25.00	23.00 –25.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –20.00	17.00 –20.00	17.00 –20.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	14.75 –17.00	14.75 –17.00	14.75 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	21.50	21.50	21.50
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00

Wax Market

(Melting points are A.M.P. method. Prices in cents per pound, f.a.s. carload lots.)

NEW YORK	May 25	May 18	May 11
124-126 Yellow crude scale	1.85	1.95	1.95
122-124 White crude scale	1.90 – 2.00	2.00	2.00
124-126 White crude scale	1.90 – 2.00	2.00	2.00
123-125 Fully refined	3.125– 3.25	3.125– 3.25	3.125– 3.25
125-127 Fully refined	3.00 – 3.125	3.125– 3.25	3.125– 3.25
128-130 Fully refined	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
130-132 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
135-137 Fully refined	4.50 – 4.625	4.625	4.625
NEW ORLEANS			
124-126 Yellow crude scale	1.85	1.95	1.95
122-124 White crude scale	1.90 – 2.00	2.00	2.00
124-126 White crude scale	1.90 – 2.00	2.00	2.00
123-125 Fully refined	3.125– 3.25	3.125– 3.25	3.125– 3.25
125-127 Fully refined	3.00 – 3.125	3.125– 3.25	3.125– 3.25
128-130 Fully refined	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
130-132 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

GASOLINE	Prices May 25	Prices May 18	Prices May 11
U. S. Motor	4.25	4.25	4.25 – 4.50
60-62, 400 e.p.	4.50	4.50	4.50 – 4.75
61-63, 390 e.p.	4.75	4.75	4.75 – 5.00
64-66, 375 e.p.	5.00	5.00	5.00 – 5.25
U. S. Motor, (cases cargoes)	$1.50	$1.50	$1.60
64-66, cases (cargoes)	$1.60	$1.60	$1.70 –$1.72
KEROSINE			
44 water white	4.75	4.75 – 5.00	4.75 – 5.00
41-43 prime white	3.75	3.75 – 4.00	3.75 – 4.00
Water white, cases (cargoes)	$1.35	$1.35	$1.40
Prime white, cases (cargoes)	$1.25	$1.25	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	2.50 – 2.875	2.875– 3.00	3.00
*30 plus translucent gas oil	2.50 – 2.875	2.875– 3.00	3.00
Grade C bunker oil, for ships' bunkers, per bbl.	$0.80	$0.80	$0.80
Grade C bunker oil, per bbl. in cargoes	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65

*Less than ½ of 1% sulphur.
†Represents sales only.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.45	$0.45	$0.46
Grade C bunker oil for bunkering, taxes paid, per bbl.	$0.80	$0.80	$0.80
VENEZUELA CRUDE			
F. o. b. deepwater, Lake Maracaibo region	$0.67	$0.70	$0.70 –$0.76

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F cold test 0 Tanker, f. o. b. Gulf oil terminals.)

100 vis. No. 2 unfiltered pale	4.75 – 5.50	4.75 – 5.50	4.75 – 5.50
200 vis. No. 3 unfiltered pale	6.75 – 7.50	6.75 – 7.50	6.75 – 7.50
300 vis. No. 3 unfiltered pale	7.75 – 8.50	7.75 – 8.50	7.75 – 8.50
500 vis. No. 3½ unfiltered pale	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
750 vis. No. 4 unfiltered pale	10.25 –11.00	10.25 –11.00	10.25 –11.00
1200 vis. No. 4 unfiltered pale	14.00 –14.75	14.00 –14.75	14.00 –14.75
200 vis. No. 5-6 red oil	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75
300 vis. No. 5-6 red oil	7.00 – 7.75	7.00 – 7.75	7.00 – 7.75
500 vis. No. 5-6 red oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
750 vis. No. 5-6 red oil	9.25 –10.00	9.25 –10.00	9.25 –10.00
1200 vis. No. 5-6 red oil	13.00 –13.75	13.00 –13.75	13.00 –13.75

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 25	May 18	May 11
Gasoline, U. S. Motor, 53-55 Gravity	3.25 – 4.00	3.375– 4.00	3.50 – 4.25
Gasoline, U. S. Motor-blends and special cuts	4.00 – 4.75	4.25 – 4.75	4.25 – 4.75
Gasoline, 400 e.p. blend	4.25 – 5.00	4.50 – 5.00	4.50 – 5.00
Gas Oil, 30-34 per bbl.	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Diesel Oil, 27 plus, per bbl.	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Bunker oil, 14-18 per bbl.	$0.55 –$0.70	$0.55 –$0.70	$0.55 –$0.70
Fuel oil, 14-18 per bbl.	$0.55 –$0.80	$0.55 –$0.80	$0.55 –$0.80
Kerosine, 38-40 w.w., 125-150 flash, per gal.	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
Cased Goods			
Gasoline, U. S. Motor	$1.45 –$1.55	$1.45 –$1.55	$1.45 –$1.55
Gasoline, 400 e.p. blend	$1.55 –$1.65	$1.55 –$1.65	$1.55 –$1.65
Kerosine, 38-40 w.w., 125-150 flash	$1.40 –$1.45	$1.40 –$1.45	$1.40 –$1.45

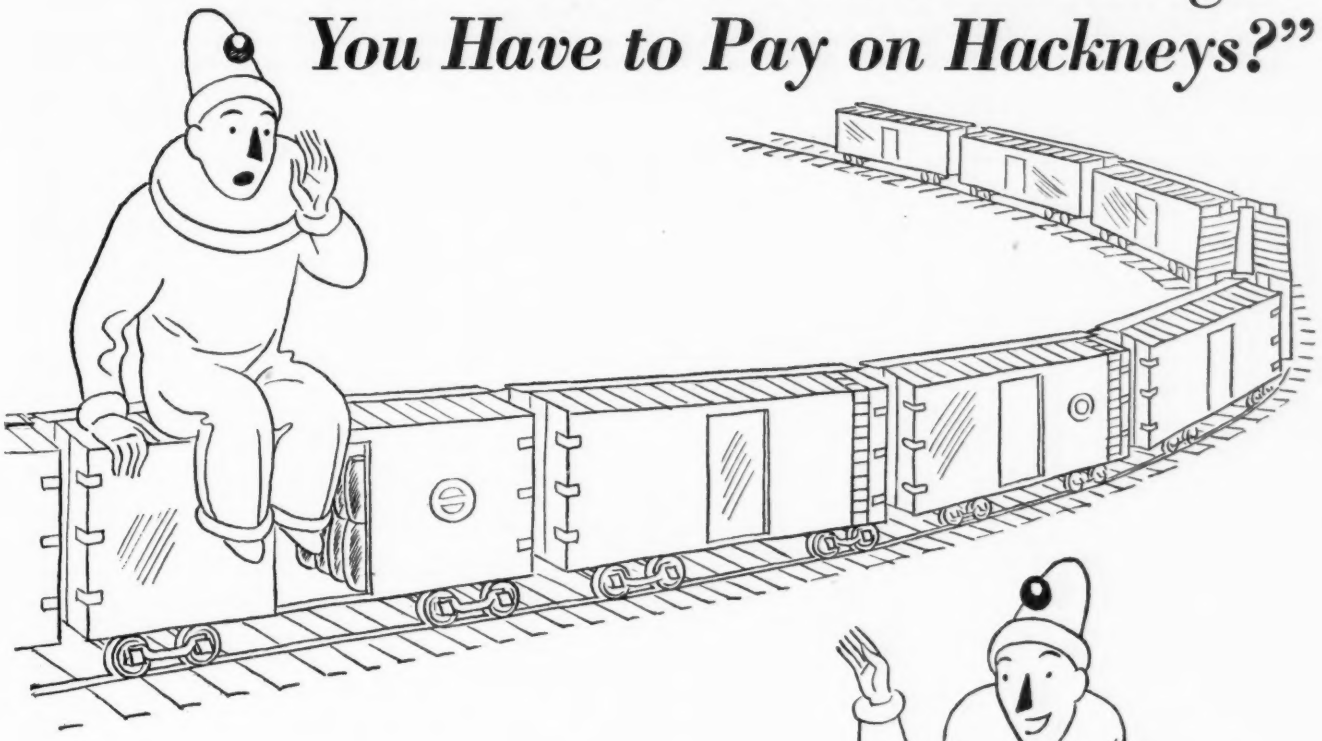
Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 25	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	10-11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.45-$0.50	$0.45-$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14-15	15

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

"How About the Return Freight You Have to Pay on Hackneys?"



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Records of many leading companies show that Hackney Seamless Steel Barrels and Drums can save as high as 50% in shipping costs over single trip containers.

And in addition to return freight, these figures include interest and depreciation on the original investment in Hackneys—maintenance—cleaning—insurance—clerical costs to keep track of containers—and extra freight on out-shipments due to greater weight.

Let us consult with you on the advisability of shipping your liquid or dry bulk materials in Hackney permanent steel containers. We may be able to work out a plan which will mean a substantial saving in your shipping costs.

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485 Roosevelt Bldg. . . . . Los Angeles

Hackney
MILWAUKEE

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 25, 1931, as Posted by Principal Marketing Companies

S.O.NEW JERSEY TERRITORY

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W
Atlantic City, N. J.	10.7	3	13.7	15.7	11.5
Newark, N. J.	9.7	3	12.7	14.7	10.5
Annapolis, Md.	11.2	4	15.2	16.2	11
Baltimore, Md.	10.4	4	14.4	15.4	8.5
Cumberland, Md.	12.2	4	16.2	17.2	12
Washington, D. C.	10.9	2	12.9	13.9	10.0
Danville, Va.	12.0	5	17	18	11.8
Norfolk, Va.	10.5	5	15.5	16.5	10.0
Petersburg, Va.	11.5	5	16.5	17.5	11.3
Richmond, Va.	10.9	5	15.9	16.9	10.7
Roanoke, Va.	12.2	5	17.2	18.2	12
Charleston, W. Va.	11.7	4	15.7	16.7	11.5
Keyser, W. Va.	12.3	4	16.3	17.3	12.1
Parkersburg, W. Va.	10.4	4	14.4	15.4	10.2
Wheeling, W. Va.	11.6	4	15.6	16.6	11.4
Charlotte, N. C.	12.5	6	18.5	19.5	11
Hickory, N. C.	12.8	6	18.8	19.8	12.6
Mt. Airy, N. C.	12.7	6	18.7	19.7	12.5
Raleigh, N. C.	12.4	6	18.4	19.4	12.2
Salisbury, N. C.	12.7	6	18.7	19.7	12.5
Charleston, S. C.	10.5	6	16.5	17.5	10.3
Columbia, S. C.	12.4	6	18.4	19.4	12.2
Spartanburg, S. C.	12.7	6	18.7	19.7	12.5

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers thru S. O. New Jersey territory, except Maryland and Washington, D. C. where discount is 3c.

S. O. NEW YORK

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	11.3	2	13.3	15.3	10
Borough of Richmond	11.7	2	13.7	15.7	12
Albany, N. Y.	12.6	2	14.6	16.6	10.5
Buffalo, N. Y.	11.8	2	13.8	15.8	10
Rochester, N. Y.	12	2	14	16	10
Syracuse, N. Y.	12.8	2	14.8	16.8	10.5
Boston, Mass.	11.5	3	14.5	16.5	11
Augusta, Me.	12.8	4	16.8	18.8	12.
Manchester, N. H.	12.4	4	16.4	18.4	11
Burlington, Vt.	13.3	4	17.3	19.3	11
New Haven, Conn.	12.6	2	14.6	16.6	10
Providence, R. I.	11.7	2	13.7	15.7	11

Discounts on gasoline: 2c per gal. off posted t.w. price to dealers, thru territory, except 3c to dealers inNew York City, effective Feb. 20, 1931.

ATLANTIC REFINING

Pittsburgh, Pa.	12	*	12	17	12
Philadelphia, Pa.	12	*	12	17	12
Allentown, Pa.	12	*	12	17	12
Erie, Pa.	12	*	12	17	12
Scranton, Pa.	12	*	12	17	12
Altoona, Pa.	12	*	12	17	12
Dover, Del.	12	3	15	17	12
Wilmington, Del.	12	3	15	17	12
Boston, Mass.	11.5	3	14.5	16.5	11
Springfield, Mass.	12.5	3	15.5	17.5	11
Worcester, Mass.	12.3	3	15.3	17.3	11
Fall River, Mass.	12.1	3	15.1	17.1	11
Providence, R. I.	11.7	2	13.7	15.7	11
Hartford, Conn.	12.5	2	14.5	16.5	10
New Haven, Conn.	12.6	2	14.6	16.6	10
Atlantic City, N. J.	10.7	3	13.7	15.7	11.5
Camden, N. J.	9.8	3	12.8	14.8	10.6
Trenton, N. J.	10.2	3	13.2	15.2	11
Annapolis, Md.	11.2	4	15.2	16.2	11
Baltimore, Md.	10.4	4	14.4	15.4	9.5
Hagerstown, Md.	11.9	4	15.9	16.9	11.7
Richmond, Va.	10.9	5	15.9	16.9	10.7
Wilmington, N. C.	10.6	6	16.6	17.6	10.4
Brunswick, Ga.	12	6	18	20	**14
Jacksonville, Fla.	9	6	15	17	12

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

***3-cent state tax is collected by retail dealer and paid by him directly to state.**

****Georgia kerosine prices include 1c state tax.**

S. O. KENTUCKY

Lexington, Ky.	12	5	17	18	12
Louisville, Ky.	11	5	16	17	11
Paducah, Ky.	12	5	17	18	11
Covington, Ky.	11	5	16	17	11
Jackson, Miss.	11	5	16	18	11.5
Vicksburg, Miss.	11	5	16	18	11.5
Birmingham, Ala.‡‡	13	4	17	19	13
Mobile, Ala.‡	13	4	17	19	13
Montgomery, Ala.*	13	4	17	17	13.5
Macon, Ga.	12	6	18	18	†13
Atlanta, Ga.	10	6	16	18	*†12.5
Augusta, Ga.	12	6	18	20	†14
Savannah, Ga.	12	6	18	18	†12
Jacksonville, Fla.	9	6	15	17	12
Miami, Fla.	12	6	18	20	13
Tampa, Fla.	13	6	19	19	12
Pensacola, Fla.**	10	6	16	18	13

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

***Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.**

†Georgia kerosine prices include 1c state tax.

****Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.**

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

***†3c discount off t.w. price of oil at Atlanta, meeting competition.**

Latest Changes in Tank Wagon Prices

Gasoline

Atlantic Refining—T. w. and s. s. cut ½c thru New Jersey, Maryland and Virginia, except Camden, t. w. cut ½c, s. s. cut 1c, **May 6.**

T. w. and s. s. cut 3/10c, Wilmington, **April 9.**

T. w. and s. s. cut ½c, Wilmington, to 16.6c and 17.6c respectively, **May 6.**

T. w. and s. s. cut ½c Richmond, to 15.9c and 16.9c respectively, **May 6.**

S. O. Kentucky—S. s. only up 2c, Tampa, to 19c, **April 29**, s. s. only cut 2c, Tampa, to 17c, **May 2**; t. w. and s. s. up 2c, Tampa, both to 19c, **May 18.**

T. w. up 1c, s. s. up 3c, Jackson, to 16c and 18c respectively, **May 17.**

S. O. Indiana—Stanolind Blue price changes: t. w. cut 1c, s. s. ¼c, Chicago, both to 11c, including 3c tax, **May 19.** T. w. cut 2.6c, s. s. 2c, St. Joseph, both to 8.9c, including 2c tax, **May 20.** S. s. only cut 1.2c, Minneapolis, to 12c, including 3c tax, **May 19.** S. s. only cut 9/10c, South Bend, to 12.5c, including 4c tax, **May 19.** S. s. only cut 2.4c, Springfield, to 10c, including 3c tax, **May 11.**

S. O. Louisiana—T. w. and s. s. cut ½c thru Louisiana, Tennessee and Arkansas except New Orleans and Memphis unchanged, **May 20.**

Magnolia Petroleum—T. w. and s. s. cut 2c Dallas, to 13c and 16c respectively, **May 5.**

T. w. and s. s. cut 2c, Tulsa, both to 11c, **May 4.**

S.s. only cut 2c, Oklahoma City, to 11c, **May 5.**

T. w. cut 1c, s. s. up 1c, Oklahoma City and Tulsa, both to 10c t. w. and 12c s. s., **May 15.**

Kerosine

S. O. New Jersey—Kerosine cut 1c, Baltimore, to 8.5c, **May 6.**

Atlantic Refining—Correction: Kerosine at Erie, has been 12c, t. w. since Oct. 1, 1930.

Magnolia Petroleum—Kerosine cut 2c, Dallas, to 8c, **May 5.**

Kerosine cut 2c, Ft. Worth, to 8c, **May 14.**

S. O. INDIANA

‡(Red Crown Gasoline)

Chicago, Ill.	11	3	14	14	9
Decatur, Ill.	11.4	3	14.4	14.4	9
E. St. Louis, Ill.	10.7	3	13.7	13.7	8.2
Joliet, Ill.	11.4	3	14.4	14.4	9
Peoria, Ill.	11.4	3	14.4	14.4	9
Quincy, Ill.	11.2	3	14.2	14.2	8.8
Springfield, Ill.	11.4	3	14.4	14.4	9
Indianapolis, Ind.	11.3	4	15.3	15.3	10.1
Evansville, Ind.	11.1	4	15.1	15.1	9.9
South Bend, Ind.	11.4	4	15.4	15.4	10.2
Detroit, Mich.	11.8	3	14.8	14.8	10.7
Grand Rapids, Mich.	11.7	3	14.7	14.7	10.6
Saginaw, Mich.	11.9	3	14.9	14.9	10.8
Green Bay, Wisc.	11.6	4	15.6	15.6	9.4
Madison, Wisc.	11.3	4	15.3	15.3	9.1
Milwaukee, Wisc.	11.1	4	15.1	15.1	8.9
La Crosse, Wisc.	12.2	4	16.2	16.2	10
Minneapolis, Minn.	12.2	3	15.2	15.2	9.9
Duluth, Minn.	12.5	3	15.5	15.5	9.9
Mankato, Minn.	12.1	3	15.1	15.1	9.7
Des Moines, Ia.	11.5	3	14.5	14.5	9.3
Davenport, Ia.	11.5	3	14.5	14.5	9.3
Sioux City, Ia.	11.1	3	14.1	14.1	8.9
Mason City, Ia.	11.5	3	14.5	14.5	9.3
St. Louis, Mo.	*10.9	2	12.9	12.9	8.3
Kansas City, Mo.	†11.9	2	13.9	13.9	7.6
St. Joseph, Mo.	†11.5	2	13.5	13.5	7.5
Fargo, N. D.	13.9	3	16.9	16.9	11.9
Grand Forks, N. D.	14.2	3	17.2	17.2	12.2
Minot, N. D.	13.9	3	16.9	16.9	11.9
Pierre, S. D.	12	4	16	16	10.4
Huron, S. D.	12.3	4	16.3	16.3	10.7
Wichita, Kans.	9.8	3	12.8	12.8	7.8
Bartlesville, Okla.	8	5	13	16	7.5

‡Stanolind Blue prices are normally 2c under those shown above. At the following points, these prices are below normal on Stanolind Blue:

(Stanolind Blue Gasoline)

	Total			
	T.W.	Tax	T.W.	S.S.
Chicago	8	3	11	11
Springfield, Ill.	9.4	3	12.4	10
St. Louis	*8.9	2	10.9	9.9
St. Joseph, Mo.	†6.9	2	8.9	8.9
Detroit, Mich.	9.8	3	12.8	11.9
Wichita, Kan.	6.8	3	9.8	8.8
Minneapolis, Minn.	10.2	3	13.2	12
South Bend, Ind.	9.4	4	13.4	12.5
Des Moines, Ia.	9.5	3	12.5	9.9
Sioux City, Ia.	9.1	3	12.1	9.1

*****Includes city tax of ½c.

†Includes city tax of 1c.

Discounts: Q.D.A., effective May 11, 1931, on gasoline:

To re-sellers, thru territory, except Chicago:

	Under 75,000 Gals. Off S.S. Price	75,000 Gals. and Over Off T.W. Price
Ethyl gasoline	3c	4c
Red Crown gasoline	2.5c	3.5c
Stanolind Blue	1c	2c

In Chicago, in any quantity, discounts are 4c per gal. on Ethyl gasoline, 3.5c on Red Crown, and 2c on Stanolind Blue, discounts being off service station prices in quantities up to 75,000 gallons, and off t.w. price in quantities of 75,000 gallons and over.

To consumers, thru territory, except Chicago:

	1,000 to 75,000 Gallons Off T.W. Price	75,000 Gals. and Over Off T.W. Price
Ethyl gasoline	3c	4c
Red Crown gasoline	2.5c	3.5c
Stanolind Blue	1c	2c

In Chicago, in quantities over 1,000 gallons: Ethyl gasoline, 4c; Red Crown 3.5c; Stanolind Blue, 2c, all discounts being off tank wagon price.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both: Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 2.25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both: Missouri, 1/50c to 1/2c on both; Nebraska 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 1/25c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan, 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect May 25, 1931, as Posted by Principal Marketing Companies

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Ohio statewide	12	4	16	17	13
Defiance, Hancock, Marion and Wyandot counties	12	4	16	16	13
Williams county	11	4	15	15	13

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices except in counties where prices are below statewide schedule, discount is generally 3c.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

S. O. NEBRASKA

Omaha, Neb.	8.9	4	12.9	12.9	9.25
McCook, Neb.	12	4	16	17.75	10.75
Norfolk, Neb.	11.75	4	15.75	16.75	9.75
North Platte, Neb.	12.75	4	16.75	17.75	10.5
Scottsbluff, Neb.	12	4	16	16	10.25

Note: Discounts: Ethyl gasoline, 3c off normal service station price; Red Crown gasoline, 2.5c off s.s. price, effective April 20, 1931.

S. O. LOUISIANA

	Gasoline Posted Retail T.W.	Tax	Total Posted Retail T.W	Posted Retail S.S.	Oil T.W.
Little Rock, Ark.	10	6	16	17	11
Alexandria, La.	10	*6	16	17	†12
Baton Rouge, La.	10	5	15	16	†12
New Orleans, La.	9.5	*6	15.5	16.5	†12
Lake Charles, La.	10	*6	16	17	†12
Shreveport, La.	10	5	15	16	†12
Lafayette, La.	10	*6	16	17	†12
Bristol, Tenn.	13	5	18	19	14
Chattanooga, Tenn.	12	5	17	18	13
Knoxville, Tenn.	12.5	5	17.5	18.5	13.5
Nashville, Tenn.	11.5	5	16.5	17.5	12.5
Memphis, Tenn.	8	5	13	14	10

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price.

***Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.**

†Kerosine price in Louisiana includes 1c state tax.

MAGNOLIA PETROLEUM

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Muskogee, Okla.	8	5	13	16	8
Oklahoma City	5	5	10	12	8
Tulsa, Okla.	5	5	10	12	8
Fort Smith, Ark.	10.5	5	15.5	16.5	11
Little Rock, Ark.	10.5	6	16.5	17.5	11
Texarkana, Ark.*	12	4	16	16	11
Dallas, Tex.	9	4	13	16	8
Fort Worth, Tex.	8	4	12	14	8
Houston, Tex.	10	4	14	18	11
San Antonio, Tex.	10	4	14	18	10
El Paso, Tex.	10	4	14	18	12

***Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.**

CONTINENTAL OIL

Denver, Colo.	11	4	15	18	12.5
Pueblo, Colo.	10	4	14	17	12
Grand Junc., Colo.	12	4	16	19	14.5
Casper, Wyo.	11	4	15	18	10
Cheyenne, Wyo.	12	4	16	19	11.5
Butte, Mont.	12	5	17	20	16
Helena, Mont.	15	5	20	23	16
Salt Lake City, Utah	13.5	4	17.5	20.5	16
Boise, Ida.	13	5	18	21	18
Twin Falls, Ida.	*15.5	5	20.5	..	18
Albuquerque, N. M.	11	5	16	20	14

*Less 3.5c on gasoline at time of delivery at Twin Falls.

S. O. CALIFORNIA

	State Tax	Gasoline Tank Truck	*Retail	Oil T.W.
San Francisco, Cal.	3	8	11	15.5
Los Angeles, Cal.	3	7.5	10.5	15.5
Fresno, Cal.	3	8	11	17
Phoenix, Ariz.	5	15.5	18	20
Reno, Nev.	4	16	20	19
Portland, Ore.	4	9.5	12.5	16.5
Seattle, Wash.	5	10	13	16.5
Spokane, Wash.	5	16	19	20.5
Tacoma, Wash.	5	10	13	16.5

Note: No discounts off above gasoline prices; tank truck prices are those to resale trade; wholesale prices are generally 6c above tank truck prices, except at Phoenix, 1c.

*Retail prices are those of Standard Stations, Inc., marketing subsidiary of the Standard Oil Co. of California.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	T.W.	Tax	Gasoline Total T.W	S.S	Oil T.W.
ONTARIO					
Toronto	16	5	21	24.5	17
Ottawa	17	5	22	25.5	18
North Bay	20	5	25	30.5	21
Fort William	19.5	5	24.5	28	19.5
Border Cities, including Windsor	16	5	21	24.5	15
MANITOBA					
Winnipeg	18	5	23	27	18.5
SASKATCHEWAN					
Regina	22	5	27	31	22
ALBERTA					
Edmonton	23	5	28	31.5	23
Calgary	19.5	5	24.5	28	19.5
BRITISH COLUMBIA					
Vancouver	21	5	26	28	22
QUEBEC					
Montreal	17	5	22	25.5	18
Quebec City	19	5	24	27.5	20
Three Rivers	19	5	24	27.5	20
NEW BRUNSWICK					
St. John	18.5	5	23.5	27.5	20.5
Moncton	18.5	5	23.5	27.5	20.5
NOVA SCOTIA					
Halifax	18.5	5	23.5	27.5	20.5
PRINCE EDWARD ISLAND					
Charlottetown	18.5	5	23.5	27.5	20.5

Note: In districts surrounding these points 1c additional is added to city price.

NAPHTHA PRICES

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	10.7	12.7	14.2
Detroit	13.4	14.9	15.7
Kansas City	†11.9	†13.4	†14.2
Milwaukee	12.4	*15.9	*16.7
Minneapolis	**16.7	**18.2	**19
St. Louis	11.6	13.1	13.9
New York		14	20
Boston		17	20

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York harbor	9.50
Philadelphia district	10.00
Providence	10.50
Tank Wagon or Steel Barrels	
New York City	14
Syracuse	17
Rochester	17
Buffalo	16
Providence	17
Boston	17
Bridgeport	15
Newark	16
Philadelphia	14
Lancaster	17
Altoona	17
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect May 25, 1931

	T.W.	Tax	Total T.W.
Newark, N. J.	14.9	*	14.9
Baltimore, Md.	16.2	4	20.2
Washington, D. C.	17	2	19

***New Jersey road tax of 3c does not apply on aviation gasoline, exemption being claimed at time of purchase.**

All above prices are on Stanavo Aviation Gasoline.

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston, Mass.	19	3	22

S. O. PENNSYLVANIA

Philadelphia, Pa.	16	3	19
Pittsburgh, Pa.	16	3	19
Altoona, Pa.	16	3	19

S. O. OHIO

Thru Ohio	15	4	19

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

	T.W.	Tax	Tota T.W.
Chicago	14	3	17
Indianapolis, Ind.	14.3	4	18.3
Detroit, Mich.	14.8	3	17.8
Milwaukee, Wis.	14.1	2	16.1
Minneapolis, Minn.	15.2	3	18.2
St. Louis, Mo.	13.4	2.5	15.9
Kansas City, Mo.	13.9	3	16.9
Fargo, N. D.	16.9	3	19.9
Huron, S. D.	15.3	4	19.3
Wichita, Kan.	12.8	3	15.8

In. S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. Kansas City tax of 3c includes 1c city tax; St. Louis tax of 2.5c includes ½c city tax.

S. O. LOUISIANA

New Orleans, La.	18	6	24
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above posted retail t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

4c per gal. refund to reseller.

CONTINENTAL OIL CO.

Denver, Colo.	14	4	18
Cheyenne, Wyo.	15	4	19
Helena, Mont.	18	5	23
Salt Lake City, Utah	16.5	4	20.5
Albuquerque, N. M.	15	5	20
Boise, Ida.	16	5	21

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

HOLD GASOLINE DROP-TIGHT

Fig. 880, Jenkins Bronze Foot Valve

DEPENDABLE check valve performance on the suction pipe of the gasoline pump is always a certainty with these Jenkins Gasoline Foot Valves and Jenkins Angle Check Valves.

Jenkins hold gasoline drop-tight. They end the need for costly excavating for valve repair or replacement.

Fitted with a special disc that is proof against gasoline, these valves remain unaffected by excessive operation, heavy traffic vibration, and other service strains. Jenkins Valves insure a primed pump that performs as it should.

Write for Form 146 which contains full details about these dependable Jenkins for gasoline pump service.

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absolutely drop-tight
GASOLINE FOOT VALVES & ANGLE CHECK VALVES

Fig. 882, Jenkins Bronze Angle Check Valve
Fig. 881, Jenkins Iron Body Angle Check Valve

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WAX PLANT EQUIPMENT

Filter Presses
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Paraffine Wax Sweater Plants
Complete Wax Plants designed and built
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Oil Burning Systems

BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

Crude Oil Prices (in Effect May 25, 1931)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Apr.23,1931)$2.00
Penna. Grade Oil in National Transit Lines (Effective Apr. 23, 1931).....*1.75
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Apr. 27, 1931)..... 1.60
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Apr. 23, 1931)... 1.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Apr. 23, 1931).. 1.25
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective March 11, 1931)..... 0.80
Somerset oil in main system of Cumberland Pipe Line (posted by Ashland Refining Co.) (Effective March 6, 1931).....$0.75
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929).....$0.60
*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective April 1, 1931).....$0.60

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective March 5, 1931, same gravity and price schedule as Stanolind posts in Oklahoma, Kansas and North Texas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (March 13, 1931)..$0.75

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 6, 1931

Wooster	$0.99	Princeton	$0.80
Lima	0.90	Illinois	0.80
Waterloo	1.20	West Kentucky	0.75
Indiana	0.50		

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia.....$1.50
Oil Springs..... 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of *Stanolind Crude Oil Purchasing Co.

(In Oklahoma, Kansas, †North and North Central Texas)

Effective March 5, 1931

Below 29	$0.43	35-35.9	$0.57
29-29.9	0.45	36-36.9	0.59
30-30.9	0.47	37-37.9	0.61
31-31.9	0.49	38-38.9	0.63
32-32.9	0.51	39-39.9	0.65
33-33.9	0.53	40 and above	0.67
34-34.9	0.55		

*Prairie Oil & Gas withdrew postings in Oklahoma, Kansas and Texas, Jan. 1, 1931.

On March 5, 1931 these crude purchasers met above prices: Continental Oil Co., Eason Oil Co., Mid-Continent Petroleum Corp., Standard Oil Co. of Kansas, Tidal Refining Co., White Eagle Oil & Refining Co.

On March 10, 1931, these met Stanolind: Humble and The Texas Co.

†Except these North Texas districts, prices for which see below: Wichita Falls, Wilbarger, Foard, Montague, and Cooke counties.

North Texas: Wichita, Wilbarger, Foard, Montague, Cooke Counties

Effective April 21, 1931

Below 29	$0.33	35-35.9	$0.47
29-29.9	0.35	36-36.9	0.49
30-30.9	0.37	37-37.9	0.51
31-31.9	0.39	38-38.9	0.53
32-32.9	0.41	39-39.9	0.55
33-33.9	0.43	40 and above	0.57
34-34.9	0.45		

Above prices posted by Stanolind also in West Central Texas, including Young, Palo Pinto, Stephens and Eastland counties.

Humble Oil & Refining Co.

(In East, North and North Central Texas

Effective March 10, 1931

Effective March 10, Humble pays same prices as Stanolind Crude Oil Purchasing Co. pays in Oklahoma, Kansas, etc., in these East Texas, North and North Central Texas fields: Sabine, Mexia, Powell, Boggy Creek, Richland, Wortham and Currie.

Effective April 21, Humble posted in Ranger, North Texas, Moran and Cooke Counties, same prices as Stanolind in North Texas, Wichita, Wilbarger, etc., which see above.

Magnolia Petroleum Co.

(In Oklahoma, Kansas, †North, *East and East Central Texas)

Effective March 5, 1931

Magnolia posts same prices in all three states as Stanolind, in Oklahoma and Kansas, except these lower grades:

Below 26	$0.40	27-27.9	$0.42
26-26.9	0.41	28-28.9	0.43

*Effective March 26, 1931, in East Texas.

†Except these North Texas fields, where prices are same as Humble and Stanolind in the same districts: Ranger, Clay, Montague, Wichita, Wilbarger, Young, Comanche, Eastland, Erath and Stephens, Tex., effective April 23, 1931.

Carter Oil Co.

(Oklahoma and Kansas)

March 10, 1931, same prices as Stanolind in Oklahoma and Kansas, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective April 21, 1931

Hutchinson and Carson Counties:

Below 35	$0.30	38-38.9	$0.38
35-35.9	0.32	39-39.9	0.40
36-36.9	0.34	40 and above	0.42
37-37.9	0.36		

Gray County

Below 35	$0.33	38-38.9	$0.41
35-35.9	0.35	39-39.9	0.43
36-36.9	0.37	40 and above	0.45
37-37.9	0.39		

Above prices met by Magnolia and The Texas Co. on April 23 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10, 1930. Humble withdrew Wheeler county postings Apr. 10, 1930.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective April 21, 1931

Pecos and Winkler, all grades.....$0.35
Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, all grades.....$0.30
Lea County, N. Mex.....$0.325

April 23, 1931, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

April 23, Magnolia same prices as Humble in Winkler, Crane, Upton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

All Effective April 21, 1931

Mirando.....$0.60
Salt Flat..... 0.53
Darst Creek..... 0.53
Pettus, Bee County..... 0.75

(Posted by Magnolia Petroleum Co.)

Effective April 23, 1931

Corsicana Heavy.....$0.38
Luling..... 0.38

(Posted by The Texas Co.)

Markham.....$0.50

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective March 10, 1931

Below 29	$0.43	35-35.9	$0.57
29-29.9	0.45	36-36.9	0.59
30-30.9	0.47	37-37.9	0.61
31-31.9	0.49	38-38.9	0.63
32-32.9	0.51	39-39.9	0.65
33-33.9	0.53	40 and above	0.67
34-34.9	0.55		

Smackover, all grades.....$0.45
Bellevue..... 0.45
*Urania, La. (April 21, 1931)..... 0.50
†East El Dorado (Calion)..... 0.45

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

March 10, 1931, The Texas Co. same schedule in Louisiana as Standard.

March 10, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

Stephens, Arkansas

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective March 10, 1931

Below 29	$0.38	29 and above	$0.41

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective April 21, 1931

Grades A	$0.70	29-29.9	$0.69
Grades B:		30-30.9	0.71
Below 25	0.60	31-31.9	0.73
25-25.9	0.61	32-32.9	0.75
26-26.9	0.63	33-33.9	0.77
27-27.9	0.65	34-34.9	0.79
28-28.9	0.67	35 and above	0.81

On April 23, 1931, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble, except its schedule on Grades B goes to top grade of 40 and above, at 91 cents; a 2 cent differential applies for each gravity from Humble's 35 and above.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F: Viscosity: not less than 100 seconds at 100° F. Saybolt.
Sulfur: not over 4%.

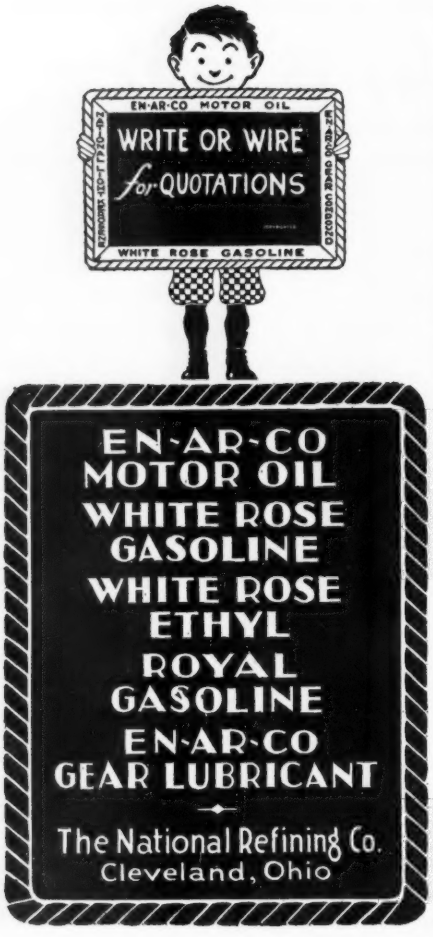
Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Zeppelin to Cook With Propane

TULSA, May 23.—Propane will be fuel used for cooking aboard the giant Navy Zeppelin ZRS-4, now under construction in Akron. A specially built range for the airship is of the type that is made for the Skelgas Co. for installation in the cities where it has distribution of its liquefied gas.

This range is 46 inches long, 23 inches wide and 34 inches from the floor to the cooking pots. Fuel supply for 12 days to cook for the crew of 50 will be carried. The range weighs 110 pounds and cast and sheet aluminum predominates. The range is flame-proof, the air for the burners entering through flame-proof gauze.

The largest source of gasoline imports for the United States in 1930 was the Netherland West Indies, which shipped 15,500,000 barrels to this country, compared with but 7,500,000 barrels in 1929 and 2,500,000 barrels in 1928.



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Well Made—Good Looking

All the essentials of modern design and construction are built into every Owosso job—without sacrificing appearance—and to give the maximum in pay load with a minimum of dead weight.

May we furnish detailed information regarding Owosso Truck Tanks.

Owosso Boiler & Welding Works
Owosso, Michigan

TANKS, BARRELS, PUMPS, EQUIPMENT

THE following is a partial list of the products which we are regularly supplying to the oil trade. Do not hesitate to send us your inquiry on any special weight or out of the ordinary equipment or any other special steel plate construction:

Field Tanks, up to 55,000 barrels
Bulk Storage Tanks and equipment complete
Fuel Oil Tanks, all types and sizes
Truck Tanks, oval, round, square, or semi-rectangular
Fuel Oil Truck Tanks, insulated and with heating arrangement
Lubricating Oil Plants, including complete compounding equipment
Grease and Soap Kettles, steam jacketed, with air or mechanical agitator
Steel Drums, complete line
Rotary and Plunger Type Pumps, valves, and fittings

BROWN SHEET IRON & STEEL CO.

964 Berry Avenue **St. Paul, Minn.**

Canadian Associate: Canadian Brown Steel Tank Co., Ltd., Brandon, Manitoba

Tear off this Coupon and Mail it *Today*

Interested in.....

Size..... Truck.....

Other Equipment.....

Name.....

Address.....

Crude Oil Prices (in Effect May 25, 1931)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS
(Posted by Midwest Refining Co.)
(Salt Creek prices effective March 5, 1931)

Salt Creek, below 29°	$0.43
" " 29-29.9	0.45
" " 30-30.9	0.47
" " 31-31.9	0.49
" " 32-32.9	0.51
" " 33-33.9	0.53
" " 34-34.9	0.55
Salt Creek 35-35.9	0.57
" " 36-36.9	0.59
" " 37 and above	0.61

(Posted by Ohio Oil Co. and Midwest Refining Co.)

Elk Basin	$0.90
Grass Creek light	0.90
Big Muddy	0.65
Lance Creek	0.98
Rock Creek	0.66
Mule Creek	1.20
Rex Lake	1.10
Pondera	1.45
†Osage	0.50
†Cat Creek, Mont.	0.90
Sunburst, Mont.	1.55
†Hogback, N. Mex. (April 1, 1931)	0.90

†Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin. Others are prices of Ohio Oil Co.

CALIFORNIA CRUDE
†Standard Oil Co. of California
Effective March 31, 1931

Gravity	Signal Hill, Seal Beach, Alamitos Heights, Huntington Beach, Inglewood, Olinda-Brea Canon, Athens-Rosecrans-Dominguez, Torrance, Richfield, Whittier, LaHabra, Montebello, Coyote Hills and Santa Fe Springs	Elwood Terrace	Newhall, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills, Coalinga and Wheeler Ridge	*Santa Paula	*Orcutt
14-19.9	$0.65	F.O.B. Ship	$0.55	$0.60	$0.55
20-20.9	.65		.53	.58	.53
21-21.9	.62		.51	.56	.51
22-22.9	.59		.49	.53	.49
23-23.9	.56		.47	.50	.47
24-24.9	.53		.45	.47	.45
25-25.9	.50		.43	.44	.43
26-26.9	.47		.41	.41	.41
27-27.9	.44		.39	.38	.39
28-28.9	.41		.37	.35	.37
29-29.9	.38		.35	...	.35
30-30.9	.35		...	...	...
31-31.9	.35		...	...	...
32-32.9	.35		...	...	...
33-33.9	.35		...	...	...
34 and above	.35	$0.35	...	...	...

*Posted by Union Oil Co. of California, effective March 30, 1931.

†Postings on Kettleman Hills crude discontinued by Standard, March 10, 1931; on Playa del Rey, March 31, 1931.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 25	May 18
Soda Ash Light 58% bags, cwt.	$1.20-1.38	$1.20-1.38
Silicate of Soda 60 deg. drums, cwt.	$1.75-1.90	$1.75-1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.70	$0.70
Silicate of Soda 40 deg. drums, cwt.	$1.00	$1.00
Sal Soda wks.	$0.90-1.20	$0.90-1.20
Caustic Soda 76% solid, cwt.	$2.25-2.50	$2.25-2.50
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	$11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks, lb.	1.75	1.75

Compounders' Supplies

	May 25	May 18
Vegetable Oils		
Linseed carloads, spot, lb.	8.60	8.80
Tanks, spot	8.00	8.20
Soya Bean, Tank, coast, lb.	7.10	7.10
Oleic Acid		
Distilled, tanks, lb.	7.50	7.50
Distilled, bbls, lb.	8.75	8.75
Saponified, tanks, lb.	7.75	7.75
Saponified, bbls, lb.	8.625	8.625
Lard Oils		
Prime Winter Strained, lb.	13.00	13.00
Extra Winter Strained, lb.	9.75	9.75
Extra, lb.	9.50	9.50
Extra No. 1, lb.	8.75	8.75
No. 1, lb.	8.50	8.50
No. 2, lb.	8.25	8.25
Tallow oil, lb.	8.00	8.00
Neatsfoot Oil		
Pure, bbls, lb.	11.25	11.25
Extra, bbls, lb.	9.00	9.00
No. 1 bbls, lb.	8.75	8.75
Cold Pressed, lb.	16.00	16.00
Fish Oils		
Menhaden Oil Light Pressed, gal.	38–40	38–40
Light Pressed, tank cars, N. Y., gal.	30–32	30–32
Yellow bleached, gal.	42–44	42–44
Whale, extra winter bleached, gal.	75	75
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	51	51
Steam, distilled turpentine, Savannah, gal.	49	49
Gum turpentine, N. Y., gal.	53	53
Gum turpentine, f. o. b. cars Savannah, gal.	46	46
Wood Rosin, N. Y., bbl.	$5.10	$5.10
Wood Rosin F, Savn'h, bbl.	$5.00	$5.00
Gum Rosin B, N. Y., bbl.	$4.80	$4.80
Gum Rosin B, f. o. b. cars Savannah, bbl.	$4.05	$4.05
Rosin oil, pure, gal.	54	54
Rosin, oil, compounded, gal.	48	48
Pine Tar		
Kiln burnt, bbl.	$10.00-11.00	$10.00-11.00
Retort, bbl.	$11.50-12.50	$11.50-12.50
Alcohol		
Denatured Formula 5, in tanks, per gal.	24	24

Summer Courses in Refining

CLEVELAND, May 23.—Special summer courses in oil refining will be offered again at the Massachusetts Institute of Technology, Boston, July 20 to Aug. 21. Last year's courses were highly successful, with men from 17 refineries enrolled.

Dr. Warren K. Lewis will give a course on distillation, rectification and absorption and a seminar for advanced students on the behavior of hydrocarbons under high pressure. Dr. Thomas K. Sherwood will give a course on dynamics of fluids and flow of heat. Special lectures by others will be given each Saturday.

The second, third and fourth largest importers of lubricating greases from the United States in February were Germany, Canada and Japan, which took a total of 1,630,000 pounds. Germany imported 593,000 pounds and Canada and Japan each around 515,000 pounds.

Rumanian crude oil production in January totaled 4,235,000 barrels, compared with 3,121,400 barrels in January, 1930. Exports of crude and principal refined products were 30,000,000 barrels in 1930, compared with 21,349,500 barrels in 1929.

Higher Viscosity Oils Not Needed For High Speed Driving

CHICAGO, May 23

STANDARD OIL CO. of Indiana has announced results of its 7000-mile test of fuel and lubricant consumption in 17 automobiles, conducted at the Indianapolis speedway under auspices of the American Automobile Association contest board.

The extent of increase in gasoline and motor oil consumption in high speed driving, carbon deposition, and the effect of using heavy oils to reduce oil consumption, was revealed in the tests.

At 30 miles per hour, on two 1000-mile tests, the 17 cars averaged 13.13 to 12.94 miles per gallon of gasoline. At 55 miles per hour the cars gave from 10.24 to 11.08 miles per gallon.

For 2000 miles, at 30 miles per hour, the average was 13.035 miles per gallon, while the average for 5000 miles, at 55 miles per hour, was 10.53 miles. By increasing the speed 25 miles per hour above 30 miles, per hour consumption increased 19.21 per cent.

The increase in oil consumption was even more marked at high speeds. Using identical oils the contest board found the average car used 1 quart of oil per thousand miles at 30 miles per hour. At 55 miles per hour the average car used 6.9 quarts in 1000 miles.

By increasing the viscosity of the motor oil some reduction was made in oil consumption. Using Iso-Vis No. 30 oil, at 55 miles per hour, the average consumption was 9 quarts 1¾ pints in 1000 miles. This was cut to 7 quarts ¼ pint by using Iso-Vis No. 50 and to 5 quarts 1¼ pints by using Iso-Vis No. 60.

Increasing oil viscosity to cut down consumption had the effect of increasing gasoline consumption, the tests showed. Using Iso-Vis No. 30 the 17 cars got 11.08 miles per gallon of gasoline but with Iso-Vis No. 60 they got only 10.41 miles per gallon. To save 4 quarts ½ pint of oil by increasing oil viscosity the motorist would increase his gasoline consumption 5.81 gallons per thousand miles.

Before starting the tests the new cars were broken in by being operated 1000 miles at 25 miles per hour, 500 miles at 35 miles, 400 miles at 45, and 100 miles at 55 miles per hour.

The tests were as follows:

1. One thousand miles at 30 miles per hour using Iso-Vis No. 50. Mileage was continuous with stops only for fuel and oil.
2. One thousand miles at 30 miles per hour using Polarine No. 40.
3. One thousand miles at 55 miles per hour using Iso-Vis No. 50.
4. One thousand miles at 55 miles per hour using a nationally advertised S.A.E. 50 Pennsylvania motor oil.
5. One thousand miles at 55 miles per hour using Polarine No. 40.
6. One thousand miles at 55 miles per hour using Iso-Vis No. 60.
7. One thousand miles at 55 miles per hour using Polarine No. 30.

At the end of each test measurements were taken for cylinder wear and engine carbon was measured in grams per cylinder.

Detailed results of the test are given in the following table. In every case cylinder wear was less than can be ordinarily measured and at the end of the tests total wear for 9000 miles was less than one one-thousandth of an inch.

Test No.	Oil Consumption Qts./100 Mi.	Gasoline Consumption Mi./Gal.	Engine Carbon Grams/Cyl.
1	0.131	13.13	6.23
2	0.073	12.94	5.09
3	0.711	10.35	3.73
4	0.543	10.24	4.95
5	0.660	10.58	4.47
6	0.566	10.41	4.41
7	0.984	11.08	3.65

Crude Stocks Lower in April

NEW YORK, May 25.—A 1,228,000 barrel decrease in pipeline and tank farm gross domestic crude stocks was reported for April east of the Rocky Mountains, according to the American Petroleum Institute. This follows decreases of nearly 3,000,000 barrels in March, 2,000,000 barrels in February, and nearly 1,000,000 barrels in January.

NEW EQUIPMENT

Aro Equipment Corp., Bryan, O., has developed an electric portable high-pressure lubricator which will deliver the lightest oils or heaviest fibre greases under all reasonable service conditions, the company says, even at zero temperatures or below.

Some of the advantages of this new device include two grease pumps operating independently but from a common roller-bearing eccentric, permitting two-speed delivery with instant control at hand operating lever, and providing double protection against service interruptions; a special design which eliminates air pockets; a direct drive, ball bearing shaft motor that runs free when not actually delivering greases; and a unit design, simple and convenient, in which the 20-pound grease containers are quickly interchangeable.

All working parts are contained in easily removable unit assemblies. The lubricator is made in two sizes, one equipped with a ¼ h.p. motor for passenger car lubrication and the other with a ½ h.p. motor for heavy duty truck and bus lubrication.

* * *

A. Y. McDonald Mfg. Co., Dubuque, Ia., has published a 12-page book illustrating and describing the advantages and correct application of over 100 oil handling devices.

Among the new items described are foot valves, improved pressure relief valves, line strainers, slip spouts, meter pump hose nozzles and loading line valves.

* * *

Goulds Pumps, Inc., Seneca Falls, N. Y., has opened a new office at Dallas, Tex. in the Magnolia Bldg. Fred H. Hayes is manager.

The MODERN line of TIRE VALVES

New—in the spirit of the modern automobile—Dill Tire Valves and accessories are made to suit today's requirements.

Utterly dependable, fool proof, they make tire maintenance a simpler, surer task. And through their reliability, they contribute much to the safety and satisfaction of motoring.

Wherever the most popular tire service is offered, there you'll find this precision-made line of *modern* tire hardware—valves, valve insides, caps, gauges, and air chucks. The leading jobbers and tire companies distribute them—with full confidence in their unusual quality.

Send for your copy of the Dill Handbook. It tells why.

THE DILL MANUFACTURING CO.
CLEVELAND, OHIO

Manufactured in Canada by The Dill Mfg. Company of Canada, Ltd., Toronto, Ontario

DILL

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ended May 23 Sale	First	High	Low	Last	Change§
42⅝	17½	42¼	16½	922,075	N.P.	Amerada Corp.	50cQ	Jan. 30, 31	6,500	17	17⅛	16½	17	— ⅛
64¾	12½	37	5⅛	209,180	N.P.	American Republics Corp.	....	.....	200	6	6	6	6	— 1⅜
47¼	34½	51	30	2,240,000	$25	Associated Oil	50cQ	Mar. 31, 31	.....	.....	.....	.....	.....	.....
77⅞	30	51⅜	16⅝	2,683,868	25	Atlantic Refining Co.	25cQ	Mar. 16, 31	12,600	14⅜	14⅜	13½	14⅛	— ⅛
49⅛	20	34	8⅝	2,257,108	25	Barnsdall Corp. A	25cQ	Feb. 16, 31	21,800	7½	7¾	6⅛	7	— ⅞
34½	25	35	21	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
32⅞	12½	20⅝	8¾	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	200	8⅜	8⅜	8⅜	8⅜	— ⅛
37⅜	18	30½	7¾	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	37,600	6⅞	6⅞	6	6⅜	— ⅜
94¾	42¼	71⅛	22⅜	410,857	$100	General Asphalt Co.	75cQ	Mar. 16, 31	14,400	21¼	21¼	18⅛	19¼	— 1¾
109	26	116⅞	29¼	250,000	100	Houston Oil	....	.....	5,900	37¼	37¼	33½	35	— 2½
..	..	10¼	6⅝	.....	..	Houston Oil, new	....	.....	10,900	8½	8½	7½	7½	— 1
53	13⅛	28⅜	3	699,066	10	Indian Refining	....	Dec. 15, 20	2,200	2⅛	2⅛	2¼	2⅛	+ ⅛
51¼	11½	27¾	3½	568,816	10	do certificates	....	.....	.....	.....	.....	.....	.....	.....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	.....	.....	.....	.....	.....
18	7	12	3½	1,187,701	N.P.	Louisiana Oil Refining	....	.....	2,600	2⅞	2⅞	2	2⅛	— ¾
100¼	80	89½	60	40,000	$100	do pfd.	$1.62½Q	Feb. 14, 31	30	40	40	40	40	+ 1⅝
18½	5⅞	10⅜	1¾	330,000	N.P.	Maracaibo Oil Exploration	....	.....	1,200	1½	1½	1	1⅛	— ½
295	176	182	150	459,428	$100	Mexican Petroleum	$3Q	Jan. 20, 31	.....	.....	.....	.....	.....	.....
105	102	100	100	120,000	100	do pfd.	$2Q	Jan. 20, 31	.....	.....	.....	.....	.....	.....
69⅜	9¼	37	9¾	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	21,000	15	15⅜	14⅛	14⅝	— ⅝
39⅞	22⅛	33	11	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Feb. 16, 31	5,600	8⅝	8⅝	8	8	— ½
3⅝	¾	2½	¾	908,171	N.P.	Middle States Oil ctfs.	....	.....	.....	.....	.....	.....	.....	.....
..	..	32	16	6,708,086	N.P.	Ohio Oil Co.	25cQ	Mar. 14, 31	.....	.....	.....	.....	.....	.....
69	40¼	64¼	42	1,000,000	$50	Pan Amer. Petrol. & Trans.	....	Oct. 20, 27	.....	.....	.....	.....	.....	.....
69¼	40½	67½	32	2,422,221	50	do B	....	Oct. 20, 27	700	29	29	29	29	— ½
15¼	3	12¾	1⅜	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	700	2⅛	2⅛	1½	1½	— ½
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	.....	.....	.....	.....	.....
..	..	27½	6	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	Dec. 31, 30	10,800	6½	7	6½	6⅞	+ ⅜
47	24¼	44¾	12	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Jan. 2, 31	39,600	7	7⅛	6	6⅛	— 1
3⅜	1	2½	½	1,184,917	$25	Pierce Oil Corp.	....	.....	1,500	⅝	⅝	⅝	⅝	0
51½	20	52	7½	150,000	100	do pfd.	....	Feb. 1, 22	700	10	10	8⅜	9	— 1
5⅞	½	7⅛	1⅜	2,500,000	N.P.	Pierce Petroleum Corp.	10c	Feb. 16, 31	2,400	1⅝	1⅝	1½	1⅝	0
65⅜	40½	54	11¼	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Mar. 31, 31	7,400	9¼	10	9	9¾	+ ⅛
65	45	60	16⅝	4,050,000	25	Prairie Pipe Line Co.	75cQ	Mar. 31, 31	3,900	21¼	21½	19½	20½	— ⅞
25⅞	4	31	1	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	400	3	3	2¾	2¾	— ½
46¾	25½	38	11½	56,907	50	do pfd.	....	May 4, 25	20	7	7	7	7	— ⅜
30¾	20	27¼	7⅝	3,038,370	25	Pure Oil Co.	....	Sept. 1, 30	13,800	6⅛	6⅜	6	6	— ½
116	108	114¼	90½	130,000	100	do 8% pfd.	$2Q	Apr. 1, 31	260	76⅞	76⅞	75	75	— 2
49⅝	22⅝	28¼	4⅛	2,891,735	25	Richfield Oil (California)	....	Sept. 1, 30	1,500	1¼	1⅜	1¼	1⅜	+ ⅛
42½	15	25¾	5	1,235,270	N.P.	Rio Grande Oil Co.	....	July 25, 30	5,400	4⅝	4⅝	4⅛	4¼	— ⅛
64	43⅛	56½	37⅛	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.3404	Jan. 31, 31	13,300	28⅜	29⅛	27⅞	28½	— ½
55¾	43⅜	48⅞	26	77,492	£2	Shell Trans. & Trading	96.6c	Jan. 23, 31	.....	.....	.....	.....	.....	.....
31¾	19	25½	5⅞	13,069,076	N.P.	Shell Union Oil Corp.	....	June 30, 30	12,300	4¾	5⅜	4⅝	5⅛	+ ¼
..	..	106¼	62	400,000	100	do pfd.	$1.37½Q	Apr. 1, 31	1,600	30	39	30	35	— 5
40⅛	15	37	5⅝	869,255	10	Simms Petroleum Co.	....	Sept. 15, 30	3,200	5¾	5¾	5¾	5¾	— ⅛
45	21	32	9¾	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	25cQ	Jan. 15, 31	33,500	8¾	8¾	8	8¼	— ¼
111	103	112¼	86	154,685	100	do pfd.	$2Q	Feb. 14, 31	400	82⅞	82⅞	82	82¼	— 1¾
46½	42	42	10⅛	1,097,650	$25	Skelly Oil Co.	50cQ	Dec. 15, 30	10,800	4½	4¾	3¼	4⅛	— ⅜
..	..	99¾	43	120,000	100	do pfd.	$1.50Q	Feb. 1, 31	.....	.....	.....	.....	.....	.....
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	Dec. 31, 30	300	104	104½	104	104	0
81⅞	51½	75	42¼	13,016,434	N.P.	S. O. California	62½cQ	Mar. 16, 31	20,300	35⅛	36	34½	35½	+ ⅛
..	..	49	14⅜	320,000	$25	S. O. Kansas	25cQ	Mar. 16, 31	4,000	11	11⅜	9	10	— 1⅜
83	48	84⅞	43½	25,443,643	25	S. O. New Jersey	‡25cQ	Mar. 16, 31	46,300	34¾	35⅛	34½	34¾	— ½
48⅛	31¾	40⅜	19¾	17,809,530	25	S. O. New York	40cQ	Mar. 16, 31	26,500	18	18⅛	17¼	17½	— ⅝
86⅜	55	70	39	1,416,911	N.P.	Sun Oil Co.	25cQ	Mar. 16, 31	1,500	34¼	34¼	32¼	34	— 1
105½	100	107¾	97¾	100,000	$100	do pfd.	$1.50Q	Mar. 2, 31	490	94	97¾	94	97¾	+ 2¾
24	5¼	9⅜	¾	1,026,979	N.P.	Superior Oil Corp.	....	.....	800	⅞	⅞	¾	¾	— ¼
71⅞	50	60½	28¼	9,850,724	$25	The Texas Corp.	75cQ	Apr. 1, 31	94,200	19⅜	21¼	18⅝	20½	+ 1
23⅞	9½	14½	4	929,947	10	Texas Pacific Coal & Oil	....	Dec. 31, 29	4,000	3¾	4	3½	4	0
23½	10	17¾	5⅞	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Feb. 16, 31	6,600	4¾	4¾	4¼	4⅝	+ ⅛
90⅞	74⅛	89¾	56	732,550	$100	do pfd.	$1.50Q	Jan. 2, 31	1,400	41½	42½	40½	40⅞	— 1⅜
40	14	31	13	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 30	.....	.....	.....	.....	.....	.....
97½	85⅛	94⅞	71	199,443	$100	do pfd.	$1.25Q	Feb. 16, 31	400	55	55	55	55	—11¾
..	..	24	12⅛	3,339,150	N.P.	Transcontinental Oil	....	May 1, 30	.....	.....	.....	.....	.....	.....
57	42⅛	50	20⅛	2,201,008	$25	Union Oil Co. (California)	50cQ	Feb. 10, 31	3,100	16¼	17¾	15¾	17¾	+ 1¼
..	..	38½	23	1,254,048	N.P.	Union Tank Car Co.	40cQ	Mar. 2, 31	.....	.....	.....	.....	.....	.....
42⅞	15	27	4½	777,603	N.P.	Warner Quinlan Co.	....	July 3, 30	1,500	3½	3½	3¼	3¼	— ¼
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	....	Apr. 20, 30	.....	.....	.....	.....	.....	.....
29¾	12⅞	21	6½	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	900	5⅝	5⅝	5⅛	5¼	— ½

*New high †New low ‡Also extra s-Stock §From close of preceding week. Total sales 519,200

Federal Court Upholds Gasoline Seizure

SHREVEPORT, May 23.—Federal Judge Ben C. Dawkins dismissed the application of the Ouachita Valley Refining Co., El Dorado, Ark., for a permanent injunction against the state supervisor of public accounts to prohibit him from seizing shipments of gasoline made by the plaintiff company.

The supervisor contended that the refining company was seeking to avoid the tax by falsely billing gasoline shipments as tractor distillate, and was shipping tank cars of gasoline to certain destinations in the state and sending bills of lading to other points in carrying out efforts to avoid payment of the tax.

The supervisor contended also that the refining company had no right in a court of equity, a point sustained by the court in dismissing the case. Judge Dawkins reserved the right of the plaintiff to apply again for an injunction in case circumstances justify.

California Gasoline Tax Collections Rise

LOS ANGELES, May 22.—Under the new California gasoline-tax collection law that provides for monthly instead of quarterly payment of the 3-cent state tax, 58 distributors paid a total of $3,510,691.60 for the month of April.

This amount is the greatest April collection since the state first placed the tax on motor fuel in 1923, and is thought accountable to the drastic gasoline price war now raging on the Pacific Coast.

Of the 118,205,103 gallons assessed during the month, 24 companies reported sales in excess of 300,000 gallons each. Distribution by the seven major companies was as follows:

	Gallons	Tax
Standard Oil Co.	23,827,564	$174,826.92
Shell Oil Co.	19,104,141	573,124.23
General Petroleum Corp.	13,748,167	412,445.01
Union Oil Co.	13,550,846	406,525.38
Richfield Oil Co. (Wm. C. McDuffie, receiver)	10,860,840	325,825.20
Associated Oil Co.	10,278,687	308,360.61
The Texas Co.	4,677,217	140,316.51

Pittsburgh Stock Exchange

Transactions Week Ended May 22, 1931

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas.	125	4⅝	4½	4⅝	— ⅜
do pfd.	1,325	6¼	†6	6¼	0
Devonian Oil.	745	5¼	4½	4½	—1½
Lone Star Gas.	8,775	17½	16¼	16½	0
do pfd.	20	101	101	101	0
Plymouth Oil.	910	9	†7⅛	7½	—1½
Shamrock O. & G.	140	5¼	5	5	0
West. Pub. Serv.	3,820	8	†7⅛	7⅛	— ¾
Wiser Oil.	50	9	9	9	0

†New low record.

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Wisconsin broker furnished names and addresses of Mid-Continent refiners of gasoline with whom he might be able to make sales connection.

* * *

New York broker told where benzol may be purchased.

* * *

Missouri oil marketer referred to source for specifications of U. S. Motor and other gasolines.

* * *

Texas service station operator told where he may obtain general training in service station operation.

* * *

Illinois advertising agent furnished gasoline consumption figures by states for February.

* * *

Illinois oil jobber told where he may obtain a complete list of natural gasoline plants and manufacturers, outside of the list published in N. P. N. annual Oil Price Handbook; and referred to source which can tell him the possibilities of using this product straight as a motor fuel, and told about the anti-knock value of natural gasoline and where he may obtain further data.

* * *

General manager of Massachusetts oil company furnished list of the 18 states allowing deductions from the state gasoline tax as compensation for collection of the tax, for evaporation, shrinkage and losses in handling.

* * *

President of Ohio oil jobbing company referred to April 22 issue of N. P. N. for passenger car and motor vehicle registrations in 1930; also furnished estimates of average consumption of gasoline and motor oil per motor vehicle; and average mileage of travel per car per year.

* * *

Texas refiner furnished names and addresses of 21 principal exporters in the United States and six brokers who handle export sales.

* * *

Minnesota division of large refiner-marketer referred to map of natural gas pipelines published in July 2, 1930 issue of N. P. N.; also to other sources for oil and gas pipelines.

* * *

Iowa jobber air-mailed press proof of current article on bulk plant fires and furnished references to six other important N. P. N. articles on this subject, in reply to his telegraph request.

* * *

New York equipment dealer told where benzol may be purchased.

* * *

The following inquirers for various types of equipment were answered the past week:

The scale, Michigan jobber told where he may buy; bulk station equipment, Ohio jobber furnished 13 names of manufacturers; alcohol, Minnesota jobber told where he can purchase; coloring fluid for gasoline, Michigan jobber furnished names of two makers; tank wagon books and invoices, Iowa motor car dealer told where he can purchase; bottle filling machine, Pennsylvania inquirer told where one can be bought; and cans, Ohio oil marketer furnished names and addresses of seven makers.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

SALES EXECUTIVE experienced marketer petroleum products. Service station, refinery sales. Conversant with lubrication, grease application and manufacture. Traffic and package economy. Budgetary control. Address Box 704.

CHEMICAL ENGINEERING GRADUATE with one year varied refining experience desires new connection, development or experimental work preferred. Address Box 722.

SALESMAN—District manager of New England for large pump company desires connection with manufacturers of gasoline pumps and grease equipment, or any equipment suitable for the oil trade. Ten years experience calling on the major and independent oil companies of New England. Address Box 727.

MARKETER technically trained with plenty of experience in buying to secure best possible margins and in cutting operating expense, would like connect with company having sizable investment which can use this experience. Address box 726.

MAN WITH 20 YEARS SALES EXPERIENCE with one of largest petroleum marketers in United States, desires direct oil and gas representation in St. Louis, Mo. and vicinity. Address Box 723.

DISTRICT SUPERINTENDENT. Successful record with major company thoroughly experienced in marketing, sales organization and general operation, bulk and retail outlets, desires connection. Address Box 728.

EXCEPTIONAL SALES EXECUTIVE
(Now Employed)

Qualified to hold positions as:

- Assistant to Executive Officer in Charge of Sales
- Manager of Tank Car Sales
- Manager or Assistant Manager of Retail Marketing Division
- Special Representative

Has had complete experience in both wholesale and retail marketing in the petroleum industry.

Thirty-six years old, married and a technical school graduate. Young enough to be energetic and have creative ideas, but old enough to be seasoned and well balanced.

Entirely familiar with markets and conditions in the South and Central West.

Proof and references can be given from former employers, present employer, employees and customers, which will show exceptional ability as a producer, leader, and sales director.

An answer to this advertisement will receive complete details and references.

Address Box 729

Situations Open

DISTRIBUTOR SALESMAN WANTED. Company marketing finest quality of Pennsylvania lubrication from patented, nonrefillable barrels that prevent dealers or distributors from substituting poor oil to the consumer. In reply please inform us where you have worked, whom you have sold, what quantity and at what price. Address Box 731.

Situations Open

WANTED: Men who know how, can and will enjoy selling lubrication. Valuable, exclusive sales franchise offer to responsible representatives. The attention of progressive, hard-working men is requested. Address Box 724.

SALESMEN WANTED

Experienced tank car lubricating oil salesmen acquainted with jobbers. Drawing account, expenses and liberal commission. Give age, experience and full particulars with references in application.

Address Box 730,
Care National Petroleum News
Cleveland, Ohio

For Sale

USED VISIBLE AND BLIND PUMPS FOR SALE. Good condition. Bowser, G. & B., Wayne and several other makes. Reasonable. Address Box 725.

Professional Services

W. S. Barstow & Company
Incorporated

Engineering—Design—Construction
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ROYAL E. BURNHAM
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Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00.

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended May 23 Sales	First	High	Low	Last	Change§
18 3/4	13 1/2	18 1/2	12 1/4	.....	£1	Anglo-Amer. Oil voting stk. ctfs.	.....	June 5, 29	.....	.....	.....	.....	.....	.....
17 1/8	11	19	12	.....	£1	do non-voting stk. ctfs.	.....	June 5, 29	.....	.....	.....	.....	.....	.....
2 1/2	3/4	1	3/8	500,000	N.P.	Atlantic Lobos Oil	.....	.....	.....	.....	.....	.....	.....	.....
4 1/8	1	1 1/2	1/8	200,000	$50	do pfd.	.....	.....	.....	.....	.....	.....	.....	.....
46 1/2	25	25	11 1/4	40,000	25	Borne Scrymser Co.	$1S.A.	Oct. 15, 30	.....	.....	.....	.....	.....	.....
74 1/4	55	69	39 7/8	200,000	50	Buckeye Pipe Line Co.	$1Q	Mar. 14, 31	100	46 1/4	46 1/8	46 1/4	46 1/8	— 1/2
210	130	184 7/8	100 1/4	120,000	25	Chesebrough Mfg. Co.	‡$1Q	Mar. 31, 31	200	117	117	115	115	— 4
11 3/4	5 5/8	7 5/8	3	.....	N.P.	Creole Petroleum Co.	.....	.....	5,600	2	2 3/8	2	2 1/4	+ 1/4
75 3/4	40	65 3/4	20 1/4	30,000	$50	Cumberland Pipe Line Co.	50cQ	Mar. 16, 31	50	23	23	23	23	+ 3/4
70 1/2	42	54 3/4	26	50,000	100	Eureka Pipe Line Co.	$1Q	Feb. 2, 31	100	25 1/4	25 1/4	25 1/4	25 1/4	0
..	..	6 3/4	2 1/2	280,000	N.P.	Galena Oil Corp. w.i.	.....	.....	.....	.....	.....	.....	.....	.....
..	..	37 1/4	23 1/8	.....	N.P.	General Petroleum Corp. w.i.	.....	.....	.....	.....	.....	.....	.....	.....
128	74 1/8	119	57 1/4	2,974,645	$25	Humble Oil & Refg. Co.	‡50cQ	Jan. 1, 31	7,800	52 3/4	53 1/2	52 3/4	53 1/4	+ 1/2
41	22	30	15	26,490,741	N.P.	Imperial Oil, Ltd.	12 1/2cQ	Mar. 2, 31	3,800	12	12	10 3/8	11	— 1
42 1/8	26	41	14 1/2	300,000	$10	Indiana Pipe Line Co.	50cQ	Feb. 14, 31	400	12 1/2	12 1/2	11 1/2	11 1/2	— 1 1/2
29 3/8	15	24	11 3/8	14,247,880	N.P.	International Petroleum Co.	25c	Dec. 15, 30	28,200	11 1/4	11 1/2	10 1/2	10 3/8	— 3/8
25 7/8	10 1/2	22 3/8	11 1/2	509,000	$12 1/2	National Transit Co.	25cQ	Mar. 16, 31	100	12 5/8	12 5/8	12 5/8	12 5/8	— 1/8
17 3/4	10	21	10 1/8	100,000	10	New York Transit Co.	40cQ	Jan. 15, 31	600	8 3/8	8 7/8	7 7/8	7 7/8	— 1 1/8
63	41	54	26 1/4	40,000	50	Northern Pipe Line Co.	$2S.A.	Jan. 2, 31	.....	.....	.....	.....	.....	.....
105 1/2	103 3/4	108	100 3/8	600,000	100	Ohio Oil pfd.	$1.50Q	Mar. 14, 31	400	89 1/2	90	89	90	— 3 1/2
44 1/2	18 3/8	32	12	400,000	25	Penn Mex. Fuel Co.	$1	Dec. 15, 30	.....	.....	.....	.....	.....	.....
50	29	33	4 7/8	160,000	25	Solar Refining Co.	.....	Dec. 20, 29	400	4 1/8	5 3/8	4 1/8	5 3/8	+ 1 1/8
23 1/2	13	20 1/8	6 3/4	100,000	10	Southern Pipe Line Co.	50c	Mar. 12, 31	.....	.....	.....	.....	.....	.....
60 1/4	35 1/8	45 7/8	18	1,200,000	25	South Penn Oil Co.	25cQ	Mar. 31, 31	1,900	13	13 1/8	12 5/8	12 5/8	— 3/8
70	45	64	32	35,000	50	Southwest Pa. Pipe Lines	$1Q	Apr. 1, 31	50	35	35	35	35	0
63	45	59 7/8	30	16,850,587	25	S. O. Indiana	50cQ	Mar. 16, 31	41,960	25 5/8	25 5/8	24 1/4	24 7/8	— 3/4
46 7/8	29	40 1/2	18 7/8	2,577,124	10	S. O. Kentucky	40cQ	Mar. 31, 31	8,400	17 1/8	17 5/8	15 5/8	16	— 1 3/8
50 1/4	40	48 7/8	34	188,159	25	S. O. Nebraska	50cQ	Mar. 20, 31	1,500	24 3/4	24 3/4	24 1/4	24 3/8	— 3/8
129	60	108 1/2	43 1/4	560,000	25	S. O. Ohio	62 1/2cQ	Apr. 1, 31	550	46 7/8	46 7/8	42 1/4	42 1/4	0
..	..	..	..	120,000	100	do 5% pfd.	$1.25Q	Jan. 15, 31	20	103 3/4	103 3/4	103 3/4	103 3/4	— 1 1/4
124 1/2	113 1/2	122	115 1/4	70,100	100	do 7% pfd.	$1.75Q	Dec. 1, 30	.....	.....	.....	.....	.....	.....
18	5 1/8	10	4	34,158	25	Swan Finch Oil Corp.	.....	Jan. 15, 29	.....	.....	.....	.....	.....	.....
133 3/4	75 1/8	97 7/8	45 3/8	5,139,887	25	Vacuum Oil Co.	$1Q	Mar. 20, 31	9,500	31 7/8	33	30 7/8	32 3/8	+ 3/8

*New high †New low ‡Also extra §From close preceding week.

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended May 23 Sales	First	High	Low	Last	Change§
.72	1/8	3/8	1/8	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8 5/8	1 1/8	4 1/2	1/2	5	Amer. Maracaibo	9,200	3/4	1	3/4	3/4	0
4 3/4	1	1 3/8	1 1/8	10	Argo Oil	.....	.....	.....	.....	.....	.....
26	3 3/4	16 3/4	4 5/8	N.P.	Arkansas Nat. Gas.	5,200	4 3/8	4 1/2	3 1/2	3 1/2	— 1
24 3/4	6 1/2	16 5/8	4 3/4	N.P.	do Class A	24,600	4 1/2	4 5/8	3 3/8	3 5/8	— 1
9	4	8 1/8	6 1/4	10	do pfd.	100	5 7/8	5 7/8	5 7/8	5 7/8	— 1/4
70	50	28 1/2	13 1/2	N.P.	British American Oil.	700	9 5/8	9 5/8	8 1/2	9 1/8	— 1 3/8
4 7/8	3/8	2 3/4	5/8	1/4	Carib Syndicate	4,200	1 1/8	1 1/8	7/8	1	— 1/8
68 1/2	20	44 1/4	13 1/8	N.P.	Cities Service	385,900	13 5/8	13 3/4	9 3/4	12 1/4	— 1 1/2
99 1/4	84	93 7/8	52	100	do pfd.	7,900	79	79	69	72 3/8	— 6 5/8
9 1/4	8	9	7 1/4	10	do pref. B	400	6	6	5 1/8	5 1/8	— 1 3/8
96	81	89 7/8	80	100	do pref. BB	300	60	60	59 1/2	59 1/2	—12
1 1/2	1/4	1/8	1/8	1	Colombia Syndicate	400	1/8	1/8	1/8	1/8	— 1/16
15	3 1/8	8 1/4	1 1/8	N.P.	Colon Oil Corp.	2,400	1 1/8	1 1/4	1 1/8	1 1/4	0
..	..	21	3 5/8	N.P.	Columbia Oil & Gas.	3,000	3 1/4	3 1/4	2 7/8	3 1/4	0
11 1/8	2 1/2	5 7/8	2	10	Consolidated Royalty	.....	.....	.....	.....	.....	.....
135	42	74 3/4	1 1/2	N.P.	Cosden Oil Co.	600	1	1	1	1	— 1/4
87	55	70	10 1/4	100	do pfd.	.....	.....	.....	.....	.....	.....
2 1/2	1/4	1	1/4	N.P.	Crown Central Pet.	.....	.....	.....	.....	.....	.....
11 1/2	4	..	..	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
51 1/8	51 1/8	..	..	100	do pfd.	.....	.....	.....	.....	.....	.....
26	6 1/2	13 1/2	4 1/4	N.P.	Darby Petroleum	800	2 1/8	2 1/8	2	2	— 1/4
..	..	21 3/4	21 1/2	N.P.	do new	.....	.....	.....	.....	.....	.....
11	2	11	2	N.P.	Derby Oil & Refg.	200	2 7/8	2 7/8	2 7/8	2 7/8	— 1/8
44	17	60	30	N.P.	do pfd.	.....	.....	.....	.....	.....	.....
..	..	12	12	10	Devonian Oil	.....	.....	.....	.....	.....	.....
209	115	166 7/8	58 1/2	$25	Gulf Oil Corp.	5,700	50	50	45	46	— 4
7 1/2	1 1/8	4	2 1/4	N.P.	Homaokla Oil	.....	.....	.....	.....	.....	.....
..	..	47 1/2	12 3/4	N.P.	Indian Territory A.	900	12 7/8	12 7/8	10 1/2	10 1/2	— 2 3/8
..	..	53 1/2	12 5/8	N.P.	do B	200	10 3/4	12 3/4	10 3/4	12 3/4	— 1/8
2 7/8	3/8	1 3/4	3/8	10	Intercontinental Pet.	4,600	1/16	1/16	3/8	7/16	0
3 5/8	1 1/4	3	7/8	N.P.	Kirby Petroleum	.....	.....	.....	.....	.....	.....
6 1/8	1	4 3/4	1/2	N.P.	Leonard Oil & Dev.	500	5/8	5/8	5/8	5/8	+ 1/8
38 7/8	18	29	5	N.P.	Lion Oil Refg.	300	4 1/4	4 1/4	4	4	— 1/4
67 7/8	28	55 7/8	19 5/8	N.P.	Lone Star Gas	7,600	17	17 7/8	16	16 1/4	— 3/4
..	..	31	5 1/2	$25	MacMillan Petrol.	.....	.....	.....	.....	.....	.....
2 7/8	1/4	1/2	1/8	1	Magdalena Synd.	4,500	1/4	1/4	1/4	1/4	— 1/8
38 1/2	14	16	3	N.P.	Margay Oil	300	5	5	4	4	— 1
6 3/8	2 1/4	7 1/2	1 3/4	N.P.	Mexico Ohio Oil	.....	.....	.....	.....	.....	.....
..	..	11 7/8	2 1/4	N.P.	Middle States A v.t.c.	700	3 3/8	3 3/8	3	3 1/8	+ 1/8
..	..	6	3/4	N.P.	do Class B v.t.c.	600	1	1 1/8	7/8	1	0
42	8	36 1/4	5	5	Missouri-Kansas P.L.	11,500	5 1/8	5 3/8	4 1/4	5 1/4	+ 1/8
1 1/2	1/4	3/4	3/8	1	Mountain & Gulf Oil.	.....	.....	.....	.....	.....	.....
22 7/8	7	12 1/8	4 1/2	10	Mountain Producers.	1,000	3 3/4	3 7/8	3 3/4	3 7/8	0
43 7/8	24	41 3/8	19 7/8	N.P.	Nat. Fuel Gas	2,500	19 1/8	19 1/4	18 3/4	18 3/4	— 3/4
5	2 1/4	3 1/2	1 1/8	$5	New Bradford Oil.	1,000	1	1	1	1	— 1/8
4 3/4	3 1/8	3 1/8	2 1/8	10	New England Fuel.	.....	.....	.....	.....	.....	.....
24 1/2	11 1/8	16 7/8	4	25	N. Y. Pet. Royalty	.....	.....	.....	.....	.....	.....
18 1/2	6 1/8	11 1/4	2 1/8	N.P.	North Central Texas	1,100	1 5/8	1 5/8	1 1/2	1 1/2	— 1
19 1/4	8 1/8	11 5/8	3 7/8	N.P.	Oilstocks Ltd. A	1,600	2 3/8	2 3/8	2 1/4	2 1/4	— 1/8
18 1/4	8 1/2	11 1/2	4 3/4	N.P.	do B	.....	.....	.....	.....	.....	.....
26 5/8	12 1/8	19 1/2	6 1/2	N.P.	Pacific Western Oil.	500	6 1/8	6 1/8	6	6 1/8	+ 3/8
3 1/2	1/2	2 1/2	1/4	N.P.	Pandem Oil	12,900	5/16	3/8	1/4	5/16	— 1/16
10 1/2	2 1/4	4 3/8	1	N.P.	Pantepec Oil	.....	.....	.....	.....	.....	.....
25 1/2	13 1/8	15	13 1/8	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19 1/8	N.P.	Petroleum Corp.	.....	.....	.....	.....	.....	.....
..	..	5 7/8	1/2	....	do warrants	.....	.....	.....	.....	.....	.....
37	22	27 1/2	16 1/4	N.P.	Plymouth Oil	4,100	8 7/8	8 7/8	7 1/8	7 1/8	— 1 7/8
16	9	10 1/2	3	$5	Red Bank Oil	.....	.....	.....	.....	.....	.....
8 1/2	1 1/8	5 3/8	1	N.P.	Reiter-Foster Oil	700	7/8	7/8	7/8	7/8	0
25 1/4	19	23 1/2	7	25	Richfield Oil pfd.	50	2 1/8	2 1/8	2	2	— 1/4
29	13	25	2 1/4	N.P.	Root Refining pr. pfd.	.....	.....	.....	.....	.....	.....
11	3	8 5/8	2	N.P.	Ryan Consolidated	.....	.....	.....	.....	.....	.....
5 7/8	1 7/8	2 1/2	1/2	10	Salt Creek Consol.	200	7/8	7/8	7/8	7/8	— 1/8
25 7/8	9	15 1/4	5 1/4	10	Salt Creek Producers.	2,000	5 1/8	5 1/8	4 5/8	5	+ 3/8
33 1/8	10	8	1 3/4	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
..	..	39 1/8	39	25	Signal Oil & Gas A	.....	.....	.....	.....	.....	.....
24	9	17	6	N.P.	Southland Royalty	6,300	4 1/4	4 1/4	3 7/8	3 7/8	— 3/8
12	4	10	2	5	Sunray Oil	4,300	2	2	1 1/2	2	0
23	7 1/8	19 1/2	8	N.P.	Texon Oil & Land	1,300	8	8	7 1/2	7 1/2	— 5/8
81 1/8	8 7/8	16	8	10	Venezuela Mexico	.....	.....	.....	.....	.....	.....
6 1/2	1 1/8	4 1/2	3/4	5	Venezuela Petroleum.	2,500	3/4	3/4	3/4	3/4	— 1/4
9 1/8	2	5	2	1	Woodley Petroleum.	..	.....	.....	.....	.....	.....
5 3/8	1/4	2 1/2	3/8	N.P.	Y Oil & Gas	500	5/8	5/8	1/2	1/2	+ 1/4

*New High †New Low §From close of preceding week.

New York Bonds

Week Ending May 22

	High	Low	Last	Change§
Asso. Oil gold 6s	103	102 5/8	102 1/4	— 1/8
Atlantic Refg. deb. 5s	101 3/4	101	101 3/4	+ 1/4
Cal. Pet. 5s	92	91 1/2	92	0
Cal. Pet. 5 1/2s	91	90 1/4	90 1/4	—1
General Pet. 5s	102 3/4	102 1/4	102 3/4	+ 1/4
Humble Oil & Refg. 5s	101	100 3/4	101	0
Humble Oil & Refg. 5 1/2s	103 1/4	102 5/8	103	+ 3/8
Pan Amer. P. & T. 6s	102 1/8	101 5/8	102 1/8	+ 1/4
Pan Amer. P. & T. 6s	40 1/2	39 1/2	39 1/2	—1
Phillips Pet. 5 1/4s	66	60	66	+6
Pure Oil 5 1/2s	84	79 7/8	80	—3
Pure Oil 5 1/2s	81 1/2	78 1/2	80	+4 3/4
Shell Union Oil 5s	72	68 1/2	72	+2
Shell Union Oil 5s with war.	73	70 1/2	73	+2
Sinclair Con. Oil 7s	97 1/2	91 1/4	91 1/4	— 7/8
Sinclair Con. Oil 6 1/2s	83 1/2	81 1/2	81 7/8	—1 5/8
Sinclair Con. Crude 5 1/2s	102 1/2	101 7/8	102 1/8	+ 1/8
Sinclair Pipeline	100 1/4	100	100	— 1/4
Skelly Oil 5 1/2s	50	42	49 3/4	— 1/4
Union Oil of Calif. 6s A	106	104	105	— 1/2
Union Oil of Calif. 5s C	99	98 1/8	99	+ 1/2
Warner-Quinlan 6s	50 7/8	50 1/8	50 1/8	— 3/8

New York Curb Bonds

Week Ending May 22

	High	Low	Last	Change§
Beacon Oil 6s '36	98	98	98	0
Cities Serv. 5s '66	66 7/8	59 1/4	66 7/8	0
Cities Serv. 5s '50	68	57 1/4	64	—3 3/4
Cont. Oil 5 1/4s '37	85 1/8	83 1/4	83 1/4	+ 1/4
Empire O & R 5 1/2s '42	63 5/8	49 1/8	57 1/2	—5 1/2
Gulf Oil 5s '37	100 7/8	100 3/8	100 3/8	— 3/8
Gulf Oil 5s '47	100 3/4	100	100 1/2	— 1/8
Indep. Oil 6s '39	74 1/2	72 5/8	73 3/4	+ 1/2
Sun Oil 5 1/2s '39	101 1/2	101	101 1/2	— 3/4
Valvoline Oil 7s '37	91 1/8	91 1/8	91 1/8	—3

RICHMOND, Va.—The South Carolina Petroleum Co. has been organized at Columbia, S. C., with capitalization of $5,000. W. E. Evans is president; W. H. Evans, vice president, and W. Evans, secretary.

RICHMOND, Va.—Charlotte, N. C., has been chosen the distribution center for the North Carolina Oil Co., subsidiary of the Pure Oil Co. The company will move into the First National Bank building there around May 1.

Petroleum coke exports from the United States in 1930 totaled nearly 89,000 long tons, compared with 115,820 tons in 1929 and 128,690 tons in 1928.